

# EXHIBIT 46

1 ANDREW JOHN LEGG

2 UNITED STATES DISTRICT COURT  
3 DISTRICT OF MINNESOTA

4 - - - - -

5 In re Bair Hugger Forced  
6 Air Warming Products  
7 Liability Litigation,

8 MDL No. 15-2666 (JNE/FLN)

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11 VIDEOTAPED DEPOSITION OF

12 ANDREW JOHN LEGG

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14  
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16  
17 Taken Thursday, December 1st, 2016

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23  
24 Reported By: Victoria Davies

25 Job No: 115949

ANDREW JOHN LEGG

APPEARANCES:  
THE EXAMINER  
Mr. Allen Dyer

SERJEANTS' INN CHAMBERS  
85 Fleet Street  
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By: Jonathan Holl-Allen  
For the witness  
- and -

MDU SERVICES LIMITED  
One Canada Square  
London E14 5GS, UK  
By: Katie Costello  
For the witness

BLACKWELL BURKE  
431 South Seventh Street  
Minneapolis, MN 55415  
By: Corey Gordon Esq.  
For 3M Company and Arizant Healthcare, Inc.

KENNEDY HODGES  
4409 Montrose Boulevard  
Houston, TX 77006  
By: Gabriel Assaad Esq.  
For Plaintiffs

- and -  
MESHBESHER & SPENCE  
1616 Park Avenue  
Minneapolis, MN 55404  
By: Genevieve Zimmerman Esq.  
For Plaintiffs

Also present: Mr. Simon Addinsell, videographer

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ANDREW JOHN LEGG

Thursday, December, 1st, 2016

THE VIDEOTAPED DEPOSITION OF ANDREW JOHN LEGG  
is taken on this 1st day of December 2016,  
at The Hilton Sheffield, Victoria Quay, Sheffield.  
S4 7YA. England, commencing at 11.02 a.m.

THE VIDEOGRAPHER: This is the beginning  
of DVD 1 in volume 1 of the deposition of Andrew  
Legg in the matter of -- two matters here. This  
order to obtain evidence in the United States  
District Court District of Minnesota. So in the  
High Court of Justice Queen's Bench Division before  
Senior Master Fontaine, Master in Chambers, in part  
of the evidence of the Proceedings in Other  
Jurisdictions Act 1975; and in the matter of the  
Hague Convention of the 18th March 1970 on the  
taking of evidence abroad in civil and commercial  
matters and in the matter of a civil proceeding now  
pending before the United States District Court for  
the District of Minnesota entitled as follows: In  
Re Bair Hugger Forced Air Warming Products Liability  
Litigation, Plaintiffs, verses 3M Company and  
Arizant Healthcare Incorporated. The claim number  
in the High Court of Justice is CR2016-420. And in  
the District of Minnesota, it is MDL number 15-2666

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(JNE/FLN).

Today's date is 1st December 2016 and  
the time is 11.02 a.m. I have just seen that the  
recording equipment says "1st November", so I will  
have to adjust that in a second.

The deposition is taking place at the  
Hilton Sheffield. The Court Reporter is Victoria  
Davies; videographer Simon Addinsell, both with TSG  
Reporting.

Could counsel in the room please  
introduce themselves and state who they are  
representing today, please. Starting with you, sir.

MR. GORDON: I am Corey Gordon. I  
represent the Defendants 3M and Arizant Healthcare  
Inc.

MS. ZIMMERMAN: Genevieve Zimmerman.  
Represent the Plaintiffs in the American  
proceedings, the MDL.

MR. ASSAAD: Gabriel Assaad. I also  
represent the Plaintiffs.

MS. COSTELLO: Katie Costello. I am  
solicitor for Dr. Legg.

MR. HOLL-ALLEN: Jonathan Holl-Allen. I  
am an English barrister representing Mr. Legg.

1 ANDREW JOHN LEGG  
2 THE VIDEOGRAPHER: Our Court-appointed  
3 examiner is Mr. Dyer.  
4 THE EXAMINER: My name is Allen Dyer and  
5 I am appointed by the order to conduct this  
6 examination.  
7 Now, Mr. Gordon, before we swear the  
8 witness and begin some issues have been raised as to  
9 the wording of the order in Section (I) and Section  
10 (J). In Section (I)(d) the order purports to permit  
11 you to conduct a direct examination, or what we  
12 would call an "in-chief examination", and  
13 cross-examine and re-examine. I understand that you  
14 accept that the words "and cross-examine" appear as  
15 an error?  
16 MR. GORDON: That is correct; I accept  
17 that.  
18 THE EXAMINER: I think Mr. Holl-Allen  
19 accepts that is a correct interpretation?  
20 MR. HOLL-ALLEN: Yes, sir.  
21 THE EXAMINER: In paragraph --  
22 subparagraph (e) the order purports to restrict the  
23 Plaintiff's US Counsel to conducting an  
24 examination-in-chief of the witness. In  
25 subparagraph (f) each party is restricted to

1 ANDREW JOHN LEGG  
2 questions which could, in my opinion, properly be  
3 asked of a party's own witness at trial. Whereas  
4 subparagraph (h) provides:  
5 "For the purpose of questioning in the  
6 Examination shall be for the purpose only of  
7 eliciting and recording testimony appropriate to be  
8 given at the trial in the [US] District Court of the  
9 District of Minnesota".  
10 And paragraph (j) provides for the  
11 examination to be "conducted as permitted by the US  
12 Federal Rules of Evidence".  
13 Now, perhaps you could set out in the  
14 first place what your understanding of those  
15 subparagraphs of the order is?  
16 MR. GORDON: Thank you.  
17 My understanding was that because we had  
18 originally sought the letters rogatory from our US  
19 District Court, without objection from the  
20 Plaintiffs, we represented to the High Court that  
21 both sides, both parties, wanted the testimony of  
22 the witnesses subject to the application. During  
23 the High Court proceeding, when the Court indicated  
24 that our examination would be limited to a direct  
25 examination, we queried the Court as to whether that

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2 would apply to the Plaintiffs as well and the Court  
3 indicated that it was her intent that the limitation  
4 applied both parties and directed that that  
5 provision be incorporated into the draft order.  
6 It is our position today that we do not  
7 object to the Plaintiffs conducting what would be  
8 characterized as a "cross-examination" once we have  
9 completed our direct examination, notwithstanding  
10 the provisions of the High Court order. We would  
11 stipulate to them the Plaintiffs being permitted to  
12 conduct a cross-examination.  
13 THE EXAMINER: I think it might be  
14 helpful if Mr. Holl-Allen set out his position next.  
15 You will have a full opportunity to respond.  
16 Yes. Mr. Holl-Allen, you were actually  
17 at this hearing.  
18 MR. HOLL-ALLEN: I was, sir. I confirm  
19 that at a hearing in front of Senior Master Fontaine  
20 on the 8th November of this year I represented not  
21 only Mr. Legg but also three other practitioners who  
22 are to come in terms of further depositions.  
23 As, I think, has been accepted, or at  
24 least follows from what Mr. Gordon has said, the  
25 restriction on the type of questions that can be

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2 asked on the face of the order is not an error; it  
3 was intended by this order that the questions to be  
4 permitted to be asked by each side would be limited  
5 to those questions that could properly be asked by  
6 way of examination-in-chief, and cross-examination  
7 is not permitted on the face of the order.  
8 The only exception to that is as you,  
9 sir, yourself have identified, (d), which does make  
10 reference to cross-examination in the provision  
11 relating to questioning by Mr. Gordon on behalf of  
12 the Defendants. But as he has fairly conceded that  
13 is an error and is an inconsistency with the form of  
14 the order that was made in respect of the other  
15 practitioners.  
16 So, sir ---  
17 THE EXAMINER: It would be an  
18 inconsistency even if these words didn't appear in  
19 (e) and (f). It would be ridiculous in any order to  
20 allow a party examine-in-chief, cross-examine and  
21 re-examine.  
22 MR. HOLL-ALLEN: Yes. So, sir, my  
23 recollection in this sense accords with that of  
24 Mr. Gordon, that the "prohibition", if you like, on  
25 cross-examination, or the restriction in the order,

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which does not permit any party to cross-examine, was a matter which went by agreement on the 8th November; there was no dispute about it -- although, of course, I accept that the Plaintiffs were not represented at the time of that hearing.

My instructions, on behalf of Mr. Legg, and my position, is this: That Mr. Legg has no objection in the circumstances to Mr. Gordon proceeding today to ask questions of him which, of course, will be by way of questioning in-chief, but I do not have instructions to consent to cross-examination of Mr. Legg on behalf of the -- on behalf of the Plaintiffs.

THE EXAMINER: Plaintiffs.

MR. HOLL-ALLEN: Sir, I don't want to anticipate any approach that you may see fit to take today, but certainly my provisional position is this: That any variation of this order to permit cross-examination is a matter for the jurisdiction of the Master that made it.

THE EXAMINER: I cannot bury this order, that is absolutely clear. I am duty-bound to comply with it and if I can find a way through to interpret it that is another matter, but I cannot bury its

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provisions.

MR. HOLL-ALLEN: That is helpful and clear, sir.

Sir, I note what Mr. Gordon says about the reason why the order is restricted in the way that it is. It is perhaps self-evident that whatever were and are the Defendant's purposes in restricting the order in this way, the provision, which does not permit cross-examination, affords a degree of protection my client --

THE EXAMINER: I understand that.

MR. HOLL-ALLEN: -- and I do not have instructions to consent to that protection being removed.

THE EXAMINER: I understand.

MR. HOLL-ALLEN: That is all I have to say.

THE EXAMINER: Thank you. Which of you wants to address me?

MS. ZIMMERMAN: Thank you. So, Genevieve Zimmerman on behalf of the Plaintiffs in the American Courts. Just as a preliminary statement I would like to say that the Plaintiffs have co-operated throughout this process and that we have

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provided no resistance, nor have we interfered in any way with the approach that 3M and the Defendants have made to the American Courts, or to the Court here in the United Kingdom. We have not interfered in any way with the scheduling of these depositions.

However, we have consistently requested that we be copied on any and all communications with these third-party authors and their counsel, as well as with the High Court in the United Kingdom.

Despite Plaintiffs' repeated requests, the Defendants, who I might add are the applicant here in the United Kingdom proceedings, have chosen time and again to exclude the Plaintiffs from this process.

There are two courts with meaningful jurisdiction over these depositions, or certainly over the American lawyers that are participating in those proceedings, and that is both the High Court here in the UK and the Federal District Court for the District of Minnesota. The Plaintiffs' position is that the UK High Court order contains errors that are inconsistent with both the rules applicable here in the UK, for trial testimony, and also inconsistent with the United States' Federal Rules

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of Civil Procedure for use at trial, and also the US Rules of Evidence.

Specifically focussing on the order itself, the Counsel for both 3M and for the witnesses here have noted potential errors with respect to cross-examination in section I(d). The Plaintiffs are not in a position to comment on that one way or the other, as to whether that is an error as we were not a part of these proceedings.

THE EXAMINER: No, but if this was solely a US Court order, do you accept that it will be an error to allow Plaintiffs' Counsel to examine direct, re-examine -- cross-examine and re-examine?

MS. ZIMMERMAN: The Plaintiffs?

THE EXAMINER: Or any party.

MS. ZIMMERMAN: I think typically speaking, yes, that would be inappropriate.

THE EXAMINER: So our procedures are in accordance on that.

MR. ASSAAD: Could be a misplacement as well -- there should be (d) cross-examination.

MS. ZIMMERMAN: Additionally, to the extent that the order allows the petitioning party (Defendants in the American litigation) to do a

4 (Pages 10 to 13)

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2 direct exam does not afford the Plaintiffs the  
3 ability to do a cross-exam. We also object to 3M  
4 having the ability to do a re-direct exam.  
5 THE EXAMINER: Okay.  
6 MS. ZIMMERMAN: Let's see.... Excuse me.  
7 I will just say that there is a fundamental --  
8 THE EXAMINER: But your position, if I  
9 may try to summarize it, is that because of (h),  
10 namely that the purpose why we are here is to record  
11 trial testimony, that overrides the restriction in  
12 (e) on your being limited to examination-in-chief,  
13 so that you should be allowed to cross-examine. Is  
14 that a fair summary of your position?  
15 MS. ZIMMERMAN: Precisely, sir, to the  
16 extent that some (h) says that the purpose that we  
17 are here, the sole purpose of questioning in this  
18 examination shall be for:  
19 "...only for eliciting and recording  
20 testimony appropriate to be given at trial in the  
21 United States District Court for the District of  
22 Minnesota, the Plaintiffs must be afforded the  
23 opportunity to cross-examine".  
24 THE EXAMINER: I understand that and the  
25 general points of the Federal Rules of Evidence.

1 ANDREW JOHN LEGG  
2 Okay.  
3 MS. ZIMMERMAN: I think that is a fair  
4 summary.  
5 THE EXAMINER: My decision is as follows,  
6 and then we will have to see where we go from that.  
7 The words, "and cross-examine",  
8 in (d) of I of the order, I think, can effectively  
9 be ignored. Mr. Gordon accepts that they are in  
10 error and I think everyone accepts that in any order  
11 in any Court they would be wrong.  
12 The difficulty comes with the words in  
13 (e), apparently restricting the Plaintiffs to  
14 conducting an examination-in-chief; and in (f) the  
15 words:  
16 "...to ensure equality of arms each side  
17 shall be restricted to questions which could, in the  
18 opinion of the Examiner, properly be asked of a  
19 party's own witness at a trial".  
20 So far as (f) is concerned, the  
21 words, "to ensure equality of arms", do not normally  
22 appear in that type of provision, and the words, "of  
23 a party's own witness", do not normally appear. The  
24 words are normally, "properly be asked of a witness  
25 at a trial in the High Court of Justice".

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1 ANDREW JOHN LEGG  
2 It seems me that the words that I  
3 have identified in (e) and (f) must have been  
4 included deliberately in this order. I cannot  
5 imagine that they can be accidental in anyway. Both  
6 Mr. Gordon and Mr. Holl-Allen have submitted to me  
7 that, indeed, they were there intentionally in order  
8 to restrict cross-examination of these witnesses who  
9 are, perhaps, in a peculiar position as third  
10 parties.  
11 That, however, seems to me to be  
12 in direct conflict with (i), (h) and (j), which  
13 provide for evidence to be given in accordance with  
14 US Federal Rules of Evidence, which I have no doubt  
15 at a trial, provide for direct cross-examination and  
16 re-examination and the fact that the purpose of  
17 eliciting and recording the testimony is for the  
18 trial in the United States District Court.  
19 However, I am not in a position  
20 as Examiner to resolve direct inconsistencies in an  
21 order. If there is an inconsistency which cannot be  
22 reconciled, which in my opinion there is, that would  
23 have to go back to be resolved by the Senior Master.  
24 I consider myself to be bound to  
25 follow the words that I have concluded are there

1 ANDREW JOHN LEGG  
2 intentionally in subparagraphs (e) and (f) and to  
3 rule that from my interpretation of the order the  
4 Plaintiffs are precluded from cross-examining either  
5 this witness or the doctors.  
6 Now, that opens up a number of questions  
7 of where we go from here. If you are precluded from  
8 cross-examining the witness today, you have a number  
9 of options available to you. One is to withdraw  
10 now; another is to allow Mr. Gordon to proceed with  
11 his examination (his direct examination) and then to  
12 either make objections and proceed, or withdraw at  
13 that stage. That is in order to see whether we can  
14 have something meaningful achieved today or not.  
15 The second question, of course, relates  
16 to subsequent examinations, which are,  
17 unfortunately, the first -- the next round is  
18 scheduled for Sunday this week, which does not give  
19 anyone a lot of time to go back before the Senior  
20 Master and say, "What does this order mean?"  
21 Was it pointed out to the Senior Master  
22 that this restriction on cross-examination would  
23 conflict with the general procedure when evidence  
24 comes to be given at a trial?  
25 MR. HOLL-ALLEN: I am confident that that



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1 ANDREW JOHN LEGG  
2 point was not specifically made because I am sure  
3 that --  
4 THE EXAMINER: Okay.  
5 MR. HOLL-ALLEN: -- I would recall if it  
6 had.  
7 THE EXAMINER: I think, therefore, that  
8 my -- it is not a "ruling" because I cannot rule on  
9 the order, that is not within my power -- that my  
10 interpretation of what the order means leaves it in  
11 your hands very much to decide how you want to  
12 proceed today, and whether we can proceed today with  
13 anything, and at least prevent the possibility that  
14 Mr. Legg has to come back, and/or any of us have to  
15 come back. Do you want to take a few moments to  
16 consider --  
17 MR. ASSAAD: I just want to understand  
18 your order. Are you saying --  
19 THE EXAMINER: I'm not making an "order"  
20 because I cannot make an order.  
21 MS. ZIMMERMAN: They are --  
22 MR. ASSAAD: It is interpretation. Are  
23 you saying we can't ask questions at all -- you said  
24 to direct questions, to direct examination.  
25 THE EXAMINER: That's my interpretation

1 ANDREW JOHN LEGG  
2 of the order.  
3 MR. ASSAAD: Since we're on the record I  
4 have a couple questions before we move on. Is  
5 Mr. Legg available at any time in the next two  
6 weeks?  
7 MR. HOLL-ALLEN: I have not asked him  
8 that question, and I prefer not to do it, if you  
9 like, on the record, but I am, of course, happy to  
10 ask him.  
11 MR. ASSAAD: Those are questions, I  
12 think, when we go off the record we can discuss off  
13 the record with our clients: Is Dr. Legg available  
14 at any time in the next two weeks while we're still  
15 here; we're still here until the 9th or  
16 10th December.  
17 MR. HOLL-ALLEN: Yes.  
18 MR. ASSAAD: The second question is:  
19 Going forward I assume that your interpretation is  
20 going to apply to all?  
21 THE EXAMINER: Well, I have not studied  
22 the other orders, but let's assume for these  
23 purposes they are in identical form; I don't think I  
24 am likely to change my interpretation.  
25 MR. ASSAAD: As a foreign to the UK

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1 ANDREW JOHN LEGG  
2 judicial system, what is the process of getting a  
3 call with the special Master today, or tomorrow, to  
4 set something up to resolve this issue?  
5 THE EXAMINER: I don't doubt that the  
6 Senior Master's clerk could be approached,  
7 explaining the urgency of the matter, and there is  
8 no doubt that the Senior Master is thoroughly  
9 conversant with conducting telephone hearings -- for  
10 example, I know that in asbestosis cases where  
11 evidence often has to be taken on commission, almost  
12 all the hearings are by way of telephone. The  
13 Senior Master will be perfectly used to that  
14 procedure, whether she has any time available  
15 between now and the close of business Friday I  
16 couldn't say, I don't know what her position is.  
17 But in theory, there ought to be no difficulty in  
18 arranging a hearing or something before Sunday.  
19 MR. GORDON: Could I suggest that we  
20 maybe, while they are taking a break to confer, that  
21 we contact the Senior Master's clerk and see if we  
22 can possibly get a telephone hearing on --  
23 THE EXAMINER: I think it will be very  
24 sensible, myself, because obviously on Sunday if  
25 everyone turns up at 8.30 we would want to get going

1 ANDREW JOHN LEGG  
2 with something, as opposed to having a couple of  
3 hours of trying to work out what we're going to do.  
4 Probably it will be sensible for  
5 you to contact Stephen Llewellyn.  
6 MR. GORDON: I have been in contact with  
7 Mr. Llewellyn and the barristers --  
8 THE EXAMINER: He could presumably get  
9 the ball moving on that, or counsel's clerk could  
10 get the ball moving on that.  
11 MR. ASSAAD: The reason why this is  
12 important is because, depending on the special  
13 Master's ruling, this is -- his ruling is going to  
14 stand --  
15 THE EXAMINER: Hers.  
16 MR. HOLL-ALLEN: And she's the Senior  
17 Master.  
18 MR. ASSAAD: I apologize. Senior Master:  
19 MR. HOLL-ALLEN: That is alright.  
20 MR. ASSAAD: We may, before this, contact  
21 the US judge to see whether this will even be  
22 admissible instead of wasting your client's time  
23 going through with this process and costs.  
24 THE EXAMINER: I quite understand. I am  
25 bound not to tinker with this order, but subject to

6 (Pages 18 to 21)

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1 ANDREW JOHN LEGG  
 2 that, I am very keen to get the maximum,  
 3 effectively, that can be done today and on Sunday  
 4 and next week within the confines of everyone's  
 5 legal positions, which I quite understand. Shall we  
 6 go off the record for a bit and then see where we  
 7 go. I am sorry.  
 8 THE VIDEOGRAPHER: Going off the record  
 9 at 24-minutes past 11 -- sorry blocks all the sound  
 10 out. We're off.  
 11 (Recess taken)  
 12 (Following a telephone conference  
 13 with Senior Master Fontaine)  
 14 THE VIDEOGRAPHER: We're back on the  
 15 record at five-minutes past three. Two adjustments,  
 16 as I said at the beginning of the read-in, the video  
 17 recording was showing the 1st November; it is, of  
 18 course, 1st December, and I have adjusted the  
 19 timing immediately on that before the witness is  
 20 sworn. The claim number, I think I read it out  
 21 incorrectly. In the High Court of Justice Queen's  
 22 Bench Division, it is claim number CR2016-520.  
 23 Six-minutes past.  
 24 THE EXAMINER: Do we have anyone on the  
 25 line from Florida?

1 ANDREW JOHN LEGG  
 2 THE VIDEOGRAPHER: Not yet.  
 3 THE EXAMINER: Mr. Legg, could you repeat  
 4 after me.  
 5 ANDREW JOHN LEGG, AFFIRMED  
 6 THE EXAMINER: If we could have your full  
 7 names and your professional address.  
 8 THE WITNESS: Andrew John Legg. My  
 9 professional address is Rotherham Hospital, and that  
 10 is in Rotherham.  
 11 THE EXAMINER: Thank you. Yes,  
 12 Mr. Gordon.  
 13 ANDREW JOHN LEGG, HAVING BEEN DULY AFFIRMED,  
 14 TESTIFIED AS FOLLOWS  
 15 EXAMINATION BY MR. GORDON:  
 16 Q. Thank you. Good afternoon. I understand  
 17 that the proper way to refer to you is Mr. Legg, not  
 18 Dr. Legg. Is that correct?  
 19 A. That is correct, but I don't mind either  
 20 way.  
 21 Q. For the benefit of me and Americans, for  
 22 whom referring to a doctor as "mister" would be a  
 23 sign of disrespect, could you explain, as it was  
 24 explained to me earlier, why it is actually in your  
 25 case a sign of respect to refer to you as "mister"?

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1 ANDREW JOHN LEGG  
 2 A. It is an historical thing. When  
 3 operations were performed not by doctors, but  
 4 actually by butchers, I suppose, and, therefore,  
 5 they were not qualified doctors and they were mister  
 6 because they were not doctors. So, when we become  
 7 surgeons we revert back to being mister rather than  
 8 doctor.  
 9 Q. Yes.  
 10 THE EXAMINER: A sign of ascendancy  
 11 rather than descendancy.  
 12 THE WITNESS: It depends who you're  
 13 talking to, sir, but, yes, I see it that way.  
 14 BY MR. GORDON:  
 15 Q. I wanted to be clear that I am not being  
 16 disrespectful in referring to you as Mr. Legg.  
 17 A. No.  
 18 Q. You are a physician, though. Correct?  
 19 A. Yes.  
 20 Q. What type of physician are you?  
 21 A. Orthopedic surgeon.  
 22 Q. How long have you been an orthopedic  
 23 surgeon?  
 24 A. I have been qualified as a consultant  
 25 orthopedic surgeon since July 2016.

1 ANDREW JOHN LEGG  
 2 Q. Prior to being a consultant, what were  
 3 you?  
 4 A. I was what's in the UK is a trainee, or a  
 5 resident in the States.  
 6 THE VIDEOGRAPHER: Can I stop you for a  
 7 second, sir. Can we get the person to introduce  
 8 themselves?  
 9 THE EXAMINER: I understand that we have  
 10 a US attorney in Florida who is on speakerphone and  
 11 on the videophone. Can you just introduce yourself  
 12 for the record? No-one there. Let's carry on.  
 13 BY MR. GORDON:  
 14 Q. What was your -- the period that you were  
 15 a trainee or a resident?  
 16 A. For a trainee, I was for eight years, but  
 17 doing orthopedics, and prior to that, two years.  
 18 Q. When did you graduate from medical  
 19 school?  
 20 A. 2005.  
 21 Q. Where did you obtain your orthopedic  
 22 training?  
 23 A. That was in Sheffield predominantly, but  
 24 also some in Leeds, New Zealand, and Coventry.  
 25 Q. All right. Just in the interests of

7 (Pages 22 to 25)



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1 ANDREW JOHN LEGG  
2 moving things along, I am going to mark that large  
3 volume in front of you as Exhibit 1 (Legg Exhibit  
4 1). All of the pages in it are sequentially  
5 numbered at the bottom and I will refer to the  
6 individual page numbers in Legg Exhibit 1. Go ahead  
7 and mark that.

8 MS. ZIMMERMAN: For the record --

9 THE COURT REPORTER: Just a moment.

10 MS. ZIMMERMAN: For the record, the  
11 Plaintiffs object to the exhibit for lack of  
12 foundation.

13 BY MR. GORDON:

14 Q. The first thing I want to direct you to  
15 starts at page 411 through 413.

16 THE EXAMINER: He has the same problem I  
17 have.

18 MR. GORDON: That is why I took these  
19 first couple of big ones out.

20 THE WITNESS: Okay.

21 BY MR. GORDON:

22 Q. The pages numbered 411 through 413, could  
23 you tell us what that document is?

24 A. This was a paper which was published in  
25 the Journal of Bone and Joint Surgery in 2012, I

1 ANDREW JOHN LEGG  
2 believe, which I was the primary author on. 2011, I  
3 do apologize.

4 Q. And so, the "A J Legg" there refers to  
5 you as the primary author?

6 A. Yes.

7 Q. Who were the other authors?

8 A. Tom Cannon, it was a junior doctor at the  
9 time; and Mr. Andrew Hamer was my consultant at the  
10 time.

11 Q. Were you -- and so you were a trainee at  
12 the time you were the primary author of this?

13 A. Correct.

14 Q. Okay.

15 THE EXAMINER: Let me understand because  
16 I thought I read something somewhere else. Is it  
17 correct that it is a primary author whose name is  
18 first, or is it correct that it is the junior of the  
19 authors who is named first?

20 A. Primary author is named first, and not  
21 always, but the senior author is usually last but  
22 that is not always the case. But the primary author  
23 is first.

24 THE EXAMINER: Thank you.

25 BY MR. GORDON:

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1 ANDREW JOHN LEGG  
2 Q. I was actually going to ask that, my  
3 question as well. Thank you for clarifying.

4 Now I would like you to just flip to 406  
5 through 409?

6 A. Okay.

7 Q. In the same manner, could you tell us  
8 what this document is?

9 A. This was the second paper, which was  
10 published in 2013 in the same journal.

11 Q. Again, you were the primary author?

12 A. I am.

13 Q. And Dr. Hamer is the senior author?

14 A. He was.

15 Q. But Dr. Cannon was not involved in the  
16 second paper. Is that correct?

17 A. No.

18 Q. Now, in the 2011 paper, what I am trying  
19 to do is come up with a sort of a shorthand way to  
20 describe that. This was -- this paper was based on  
21 work you did involving a volunteer subject. Is that  
22 correct?

23 A. Correct.

24 Q. And in the 2013 paper it is based on some  
25 experimental work that you did involving -- instead

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2 of a human subject it was a mannequin?

3 A. Yes. Correct.

4 Q. The only reason I am saying that is that  
5 if it is okay with you I would like to refer to the  
6 human experiment versus the mannequin experiment.  
7 The human will refer to the 2011 paper, and the  
8 mannequin will refer to the 2013 paper.

9 Which experiments were conducted first?  
10 In other words, was it the human, the one involving  
11 the human, or the one involving the mannequin?

12 A. Human.

13 Q. And how long after the human one did you  
14 conduct the mannequin study?

15 A. I don't recall exactly, but it was only  
16 months.

17 Q. What was the general time frame in which  
18 you conducted the human study?

19 A. The human study was done in two weekends.

20 Q. How long was the period of time that you  
21 took to do the mannequin study?

22 A. That was just one day.

23 Q. How much time was there in between the  
24 two studies?

25 A. Again, I think just a couple of months.

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Q. If I could flip your attention, or direct your attention, to page 392. First of all, have you seen this e-mail prior to today?

A. Yes.

Q. When did you first see it?

A. First time I saw it was when I got this bundle.

Q. Okay.

A. So, a few weeks ago.

Q. Okay. So, you had not seen it other than in connection with this process?

A. No.

Q. Okay. What I want to do is direct your attention to the very bottom of 392 where it says:

"Also, Dr Andrew Legg has invited you guys to Sheffield hospital the weekend of July 17th and 18th to help with the research effort there. If you are interested the company would be willing to cover your hotel and expenses. Let me know and I'll work to book arrangements".

MS. ZIMMERMAN: Counsel, we would like to renew our objection to lack of foundation.

BY MR. GORDON:

Q. My question to you, Dr. Legg, is whether

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you recall ever meeting an individual named Mark Albrecht?

A. Yes.

Q. Do you recall Mr. Albrecht coming to Sheffield Hospital and conducting any research activities with you there?

A. Yes.

Q. Does the time frame of July 2010 seem about right?

A. Yes.

Q. What I would like to do is see if we can put your human study and your mannequin study into a time frame in connection with that July 2010 time frame. Had you done either of the -- either the human or the mannequin study -- prior to July 2010?

A. Yes, we had done the human study.

Q. So, I take it then the mannequin study was something you did after 2000 -- after July 2010?

A. We did it in July 2010.

Q. The mannequin study was the one. So the study that you, was published in 2013, that was based on work you did in July 2010. Is that correct?

A. Correct.

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Q. Okay. Who was participating in conducting that experiment in July 2010?

A. The mannequin study?

Q. Yes.

A. On that day, myself and Mr. Albrecht.

Q. Was anyone else involved?

A. Mr. Hamer was supervising, but he wasn't present on the day.

Q. Okay. That was the one you did in one day. Is that right?

A. Correct.

Q. What role did you play and what role did Mr. Albrecht play in that experiment?

A. From the experiment point of view, it was a follow-on from my first paper and, therefore, the set-up I had already created, it was what exists in the hospital. His role was the equipment. The bubble machine, the smoke machine-- (Reporter clarification) The bubble machine, smoke machine, temperature probe, and the camera.

Q. What specifically did he do with that equipment?

A. He was able to -- obviously, it was his

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equipment, he used it to make the bubbles, and took the pictures of the bubbles using a light source.

Q. Did he have anything to do with the experimental design?

A. The experimental design, the set-up, was already created. We discussed alterations in terms of how we were going to perform it, but the actual theatre set-up was already there.

Q. Had you met Mr. Albrecht prior to July 2010?

A. No.

Q. How did you first come into contact with Mr. Albrecht?

A. It was from my first study. The first study, to be able to perform that, we needed bits of equipment, involving the temperature probe, and particle counter, and, as the HotDog machine company had highlighted a potential error -- potential problem, should I say -- that is who I contacted to see if we could use some equipment to perform an experiment. So, from that their representative gave me details to Mark Albrecht who contacted me.

Q. Do you recall the name of the representative?

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A. I don't know.

Q. Was it a UK person?

A. Yes.

Q. Okay. Was the person an employee of HotDog to your --

A. To my understanding, yes.

Q. You said that the HotDog Company had highlighted -- I don't want to put words in your mouth -- but what was it that the HotDog Company had highlighted that caused you to be interested in doing that initial experiment?

A. So, their marketing was in the form of a flier which we had seen, I think it had been sent to Mr. Hamer, and on that flier that there was a picture of how a -- how forced-air warming can disrupt laminar or unidirectional airflow.

Q. Was this a marketing brochure?

A. Yes.

Q. Okay. What -- was there any video that you saw?

A. There was video on their website, which I looked at.

Q. This was at the HotDog website?

A. Correct.

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Q. What was it that you asked of the HotDog representative that led to your contact with Mr. Albrecht?

A. Well, I set up the first experiment and the question we couldn't answer with the equipment we had from the first experiment was: What happened to the airflow, how to visualise it. So, I looked into different methods of visualizing/visualization of airflow and, at that point, they said that a good way of visualizing airflow is with bubbles and that is where Mr. Albrecht came in.

Q. In the first study (the human volunteer study) did you use any equipment that was loaned to you by the HotDog Company?

A. Yes. They loaned us a smoke machine, temperature probe, and a HotDog warming conductive warming blanket and also a particle counter.

Q. Were these -- strike that.

How were these pieces of equipment provided to you?

A. I contacted the representative. I don't know whether -- I don't recall whether I did that by phone or by e-mail, and they were more than happy to provide me with the equipment and delivered it to me

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at the hospital.

Q. Was it just delivered by like a postal service?

A. No, by the representative whose name I, unfortunately, cannot remember.

Q. At that point had you had any contact with Mr. Albrecht?

A. No.

Q. At what point after the equipment was delivered did you have any contact with Mr. Albrecht?

A. That was after concluding the first study (the human study) when we were looking, trying to explain our findings.

Q. In the first study you --

THE EXAMINER: Page?

MR. GORDON: I am sorry.

THE EXAMINER: Internal page.

MR. GORDON: Page 412.

THE EXAMINER: 412, yes.

BY MR. GORDON:

Q. You make reference to a HandiLaz Particle Counter?

THE EXAMINER: Where is this?

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MR. GORDON: On the right column up, three quarters of the way down the page.

THE EXAMINER: Yes. Thank you. Do you have that?

A. Yes.

BY MR. GORDON:

Q. Is the HandiLaz hand-held counter referred to there, is that one of the pieces of equipment that was provided by HotDog?

A. Correct.

Q. Had you ever used one prior to that?

A. No.

Q. Did anyone from HotDog assist you in configuring it or figuring out how to use it?

MS. ZIMMERMAN: Object to form. (Reporter clarification)

THE EXAMINER: Object to form. You may answer.

A. No.

BY MR. GORDON:

Q. Were you provided with any kind of manual or instructions?

A. Not that I can recall, but it is simple to use.

10 (Pages 34 to 37)

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THE EXAMINER: The paper says the number of particles was measured. Was that you who was able to carry out that measurement?

A. Correct.

BY MR. GORDON:

Q. I am going to have you take a look at page 149. It is actually a fairly large document all the way to 221?

THE EXAMINER: This is one I removed in the interests of portability.

MS. GARCIA: I don't think we're going to dwell on it.

Have you seen this before?

A. Not until I was given this bundle.

Q. Okay. And --

MS. ZIMMERMAN: Can I ask a point of clarification? As we make objections to foundation, for example, should we be looking to you?

THE EXAMINER: You're putting them on the record for the US judge.

MS. ZIMMERMAN: That is what I would assume. Well, we renew our objection for lack of foundation given the witness's testimony.

BY MR. GORDON:

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Q. Do you recall how you set the particle-size channels on the HandiLaz?

A. No, is the answer to that.

Q. When you actually used it for the first study, how did you -- how did you employ it? In other words, was it something that you held in your hand; did somebody else hold it; was it mounted on something?

A. It was mounted above -- we held it above the surgical site, ie the knee, which was the focus of the operation.

THE EXAMINER: Were you the surgeon in the operating room for the purposes of these experiments?

A. Correct. And Mr. Cannon, who is the other member on the -- was the patient.

THE EXAMINER: Right.

MR. HOLL-ALLEN: He was the human.

THE EXAMINER: Not the mannequin.

BY MR. GORDON:

Q. Was there anyone else present, besides you and Dr. Cannon, for that first experiment?

A. No.

Q. So, you were playing both the role of the

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surgeon standing there, and also holding the particle counter?

A. Sure.

Q. Okay. You also on the -- on page 411, the first page of the 2011 study?

MR. ASSAAD: 2012.

MR. GORDON: No. 2011.

Q. Do you have that page 411?

A. Yes.

Q. On the right-hand side, the second paragraph down of text describing the vertical unidirectional ventilation, there is a reference to the walls around the operating area reaching down to 30 centimetres from the floor and then a discussion of body exhaust suits. Then it states:

"Both of these systems are employed in our theatre set-up".

Then on the next page, on the right-hand side, you refer to an:

"ExFlow 90 Howorth enclosure with vertical wall extensions to 1 metre from the floor".

A. Correct.

THE EXAMINER: Where is the second one?

MR. GORDON: In the middle on the

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right-hand side.

Q. If you can just help me understand. How far did the wall extensions extend? Was it 30 centimetres or --

A. One meter off the ground. I was implying that we used wall extensions on the first page.

Q. Was there ever time when you used wall extensions that went all the way to 30 centimetres on to the floor?

A. No.

Q. Okay.

On the first page of the 2011 study, it is page 411 in exhibit 1, in the second line of the introduction you say:

"Recently there have been concerns that forced air warming may interfere with unidirectional airflow, potentially posing an increased risk of infection".

To what was that referring? To what concerns?

A. Well, the concerns that had been raised by the HotDog company.

Q. Okay. At that point were you aware of concerns raised by anyone else?

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1 ANDREW JOHN LEGG  
2 A. No.  
3 Q. Okay. Prior to conducting this study,  
4 had you had discussions with Mr. Albrecht?  
5 A. No.  
6 Q. Had you had discussions with anyone  
7 connected with HotDog (the HotDog Company) other  
8 than the representative who facilitated you getting  
9 use of the equipment?  
10 A. No.  
11 Q. Who designed the study?  
12 A. I designing the study, along with the  
13 supervision of Mr. Hamer.  
14 Q. There are, looks like, 18 references in  
15 the published version of the 2011 study. Who did  
16 the research to collect those references?  
17 A. I did.  
18 Q. How did you go about doing that? Was  
19 that a computer research? Was there a library --  
20 A. It's a combination of library and also  
21 doing the big medical journal reference libraries,  
22 which you can do searches through, which is what I  
23 did for this.  
24 Q. Do you remember what the search terms  
25 were, the search parameters that led you to these

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1 ANDREW JOHN LEGG  
2 references?  
3 A. No, I don't.  
4 Q. Again, going back to the front page of  
5 the 2011 article, you say at the beginning of the  
6 text paragraph, at the bottom at the last line of  
7 that:  
8 "There are also concerns that forced air  
9 warming devices disrupt unidirectional airflow, thus  
10 potentially causing risk of infection".  
11 For that it looks like you cite a 2002  
12 paper by Tumia and Ashcroft. Is that correct?  
13 A. That is correct.  
14 Q. Do you recall whether that paper  
15 concluded that there was any reason to be concerned  
16 about forced-air warming devices disrupting  
17 unidirectional airflow?  
18 A. I don't specifically know, recall the  
19 exact paper, I am afraid.  
20 THE EXAMINER: Was that not the paper  
21 name set out at note six?  
22 THE WITNESS: Correct, yes.  
23 BY MR. GORDON:  
24 Q. That is what you cited --  
25 A. I can't recall the exact conclusion from

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1 ANDREW JOHN LEGG  
2 that paper.  
3 THE EXAMINER: I understand that, but the  
4 name of the paper is as set out at note six.  
5 THE WITNESS: Absolutely, yes.  
6 BY MR. GORDON:  
7 Q. For the set-up, for the first experiment,  
8 was there any drape suspended from the ceiling?  
9 A. Define "ceiling".  
10 Q. Maybe that is too broad -- too narrow a  
11 question.  
12 Was there any drape that was used within  
13 the enclosure?  
14 A. Yes.  
15 MR. GORDON: Where --  
16 THE EXAMINER: Do you want to explore,  
17 for the purpose of a US jury, what "drape" in these  
18 circumstances precisely means?  
19 BY MR. GORDON:  
20 Q. Yes, thank you.  
21 Maybe it is easier if we look at  
22 the drawing in your second study. If you turn to --  
23 MS. ZIMMERMAN: 407.  
24 BY MR. GORDON:  
25 Q. 407. Does that depiction on the top of

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1 ANDREW JOHN LEGG  
2 the page, does that show generally where the drape  
3 was?  
4 A. Yes.  
5 Q. Is the drape the vertical black line that  
6 goes down to about the surgeon's elbows?  
7 A. No. That is part of the wall extensions,  
8 which come out from the Howorth enclosure. The  
9 blue, which is blue on mine, is the drape.  
10 MR. GORDON: Okay.  
11 THE EXAMINER: It comes right down to the  
12 patient's chest.  
13 THE WITNESS: Yes, and covers the rest of  
14 the patient apart from the limb being operated on.  
15 BY MR. GORDON:  
16 Q. How, so that the -- part of the drape  
17 that goes from the patient up, how is that held  
18 there? Is it suspended from the ceiling? Suspended  
19 from stanchions of some sort?  
20 A. Yes. It is suspended. Across the  
21 enclosure there is metal railing, which it is  
22 clipped to.  
23 THE EXAMINER: That is the enclosure of  
24 the operating section of the theatre?  
25 THE WITNESS: Correct.

12 (Pages 42 to 45)



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1 ANDREW JOHN LEGG  
 2 BY MR. GORDON:  
 3 Q. And is that the standard set-up that was  
 4 employed at the hospital at that time frame for knee  
 5 arthroplasties?  
 6 A. Yes. That is correct.  
 7 Q. Did you ever have any discussions with  
 8 anyone connected with the Howorth, the makers of the  
 9 unidirectional airflow enclosure, about that set-up,  
 10 hanging a drape from inside it?  
 11 A. No.  
 12 THE EXAMINER: Just before we move away  
 13 from that diagram, could you explain to me, to  
 14 clarify, where the forced-air warmer (of whatever  
 15 type it is) would be in relation to this?  
 16 THE WITNESS: It's not -- it doesn't  
 17 photocopy very well, but if you look on the body of  
 18 the mannequin there is depicted a device, but  
 19 essentially it is a torso-warming device.  
 20 THE EXAMINER: So it is from neck to  
 21 waist?  
 22 THE WITNESS: Correct.  
 23 THE EXAMINER: Thank you.  
 24 BY MR. GORDON:  
 25 Q. In your first study, I believe you do it

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1 ANDREW JOHN LEGG  
 2 on the second one as well but let's start with the  
 3 first study, you make reference on page, on the  
 4 second page, page 4 of 12, in the middle of the  
 5 second, of the second line, to a validation report  
 6 on the ventilation system conforming to the  
 7 requirements of Health Technical Memorandum HTM2025.  
 8 A. That is correct.  
 9 Q. If I could direct your attention now to  
 10 exhibit -- pages 1 through 121.  
 11 THE EXAMINER: Right back at the  
 12 beginning.  
 13 BY MR. GORDON:  
 14 A. Remind me of the numbers again.  
 15 Q. 1 through 121. That document on pages 1  
 16 through 121 is that the Health Technical Memorandum  
 17 HTM2025 to which you refer in your 2011 study?  
 18 A. Yes.  
 19 Q. Have you consulted this document (the  
 20 HTM2025) in connection with this 2011 study?  
 21 A. I know of its existence and what it tries  
 22 to achieve and I know that as part of the hospital  
 23 it has to meet certain levels, which this sets out,  
 24 and the hospital had met that. So, I know that the  
 25 hospital conditions had met this criteria.

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1 ANDREW JOHN LEGG  
 2 Q. And what did you do to satisfy yourself  
 3 that that was the case?  
 4 A. I contacted theatre staff who had  
 5 evidence that it had past the required tests?  
 6 THE EXAMINER: There are specific tests  
 7 set out in this that hospitals have to meet?  
 8 THE WITNESS: Correct.  
 9 BY MR. GORDON:  
 10 Q. And if I could now direct your attention  
 11 to pages 222 through 391.  
 12 THE EXAMINER: Another one I thought you  
 13 were not going to deal with.  
 14 MR. ASSAAD: What was it?  
 15 MS. COSTELLO: 222.  
 16 BY MR. GORDON:  
 17 Q. It's a lengthy document, obviously. It's  
 18 entitled "Heating and ventilation systems Health  
 19 Technical Memorandum 03-01: Specialised ventilation  
 20 for healthcare premises". Have you seen this  
 21 document prior to getting this volume of material  
 22 for this deposition?  
 23 A. No.  
 24 Q. Direct your attention to page 223 and the  
 25 line where about two-thirds of the way down it says

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1 ANDREW JOHN LEGG  
 2 "Superseded docs", and it says, "Health Technical  
 3 Memorandum 2025". I will direct your attention to  
 4 page 225 where the copyright on is indicated as  
 5 2007.  
 6 Were you aware, when you did your 2011  
 7 study, that the HTM2025 had been superseded?  
 8 A. No.  
 9 Q. I am guessing today is the first you  
 10 became aware of that?  
 11 MS. ZIMMERMAN: Object to form.  
 12 THE EXAMINER: You may answer.  
 13 THE WITNESS: Yes.  
 14 BY MR. GORDON:  
 15 Q. Going back to the paper, right after you  
 16 talk about the HTM2025, you say:  
 17 "Temperature measurements taken before  
 18 and 30 minutes after warming".  
 19 Do you see that?  
 20 A. Yes.  
 21 Q. I am not sure that I understand and I  
 22 want to clarify. The "before" I understand, it was  
 23 before anything had happened. Right?  
 24 A. Yes.  
 25 Q. Was the "after warming" after the warming

13 (Pages 46 to 49)



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1 ANDREW JOHN LEGG  
2 had been turned on or after the warming had been  
3 turned off -- turned on and then turned off?  
4 A. No. After the warming had been turned  
5 off, left it for 30 minutes. At that point we  
6 assumed that it had reached a stabilization point,  
7 therefore that's what we called the temperature  
8 after 30 minutes of warming. The heating device was  
9 on at that point.  
10 Q. And had been on for 30 minutes?  
11 A. Correct.  
12 Q. Okay. And that was true of both the  
13 HotDog and the Bair Hugger?  
14 A. Correct?  
15 Q. Okay. In the discussion of your 2011  
16 paper on the --  
17 A. Remind me what page we were.  
18 Q. Page 413. You state:  
19 "Because of the nature of our experiment  
20 we are unable to conclude that the use of a forced  
21 air warming device, which produced a change in  
22 temperature and an increase in the number of  
23 particles, would actually lead to an increased risk  
24 of surgical site infection. The results do suggest  
25 that the downward flow of air is disrupted, as the

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1 ANDREW JOHN LEGG  
2 blanket or the fan unit?  
3 A. The warming device is the blanket, that  
4 is what gets warm in terms of the Bair Hugger or the  
5 HotDog conductive fabric.  
6 MR. GORDON: Okay.  
7 THE EXAMINER: The measuring device is at  
8 the surgical site.  
9 THE WITNESS: Yes --  
10 THE EXAMINER: Or as close to it as you  
11 can get?  
12 THE WITNESS: Yes. That's what I was  
13 concerned about at that point.  
14 BY MR. GORDON:  
15 Q. Going back to page 413, your 2011 study,  
16 again in the discussion, the next paragraph, you  
17 say:  
18 "bacteria require particles to transport  
19 them, and although we are unable to confirm if any  
20 of the particles were transporting bacteria, the  
21 significant increase in the number of particles that  
22 we found in this study at the surgical site is a  
23 concern".  
24 Did I read that correctly?  
25 A. Correct.

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1 ANDREW JOHN LEGG  
2 warming device was lower than at the surgical site".  
3 Did I read that correctly?  
4 A. Yes.  
5 Q. Can you help me. I'm not sure that I  
6 understand the last sentence of:  
7 "The results do suggest the downward flow  
8 of air is disrupted, as the warming device was lower  
9 than at the surgical site".  
10 A. So, probably the easiest way is to look  
11 at the picture.  
12 Q. On the other side?  
13 A. Yes.  
14 THE EXAMINER: Shall we go back for it?  
15 MR. HOLL-ALLEN: 407.  
16 THE EXAMINER: Yes.  
17 THE WITNESS: The warming device is on  
18 a -- it was on a human at that point, but this is on  
19 a mannequin with them laid on their back and with  
20 their knee bent and, therefore, the knee is higher,  
21 the top of the knee is higher than the chest.  
22 Therefore, the warming device is lower than where we  
23 were measuring the temperature.  
24 BY MR. GORDON:  
25 Q. By "device" you are talking about the

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1 ANDREW JOHN LEGG  
2 Q. Did you do anything to try to assess  
3 whether there was any transportation of bacteria?  
4 A. It wasn't published here, but I spoke to  
5 a microbiologist about trying to measure bacteria,  
6 with, I believe it is called a slit sampler. Their  
7 advice was you won't be able to measure it because  
8 bacterial load is so low. We tried and we didn't,  
9 actually, to identify if there was any increased  
10 bacterial level, but the microbiologists weren't  
11 surprised at that.  
12 Q. Tell me how you attempted to measure  
13 bacteria?  
14 A. It was using these agar plates, which is  
15 a gel which grows the bacteria once it lands on it  
16 and, if I recall rightly, air's sucked into this  
17 device onto these plates which are then sent to the  
18 lab.  
19 Q. So, that is something you did in the  
20 first experiment?  
21 A. Yes.  
22 Q. How many of the agar plate devices did  
23 you use?  
24 A. I don't recall.  
25 Q. Where were they placed?

14 (Pages 50 to 53)

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A. They were placed where we were concerned, which was on the surgical site, which is at the level of the knee.

Q. So, you collected the samples on the agar plates over what period of time?

A. Again, I don't really, really recall. That was on the advice of the microbiologist, but I don't recall how long.

Q. So, before the operation you -- the microbiologist advised you to, how to go about using these agar plate colonies?

A. Yes.

Q. That -- was equipment that the hospital has?

A. Yes, because they do check the level, I don't know how often, but to make sure that the theatre environment is safe.

Q. So, you sent these agar plates to the microbiology lab. Is that correct?

A. Correct.

Q. And what kind of a report did you get back -- something written, something verbal?

A. Again, I don't recall it. I'm sure I would have got something written, but I don't recall

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it or have it.

Q. Okay. Do you recall were any bacteria or colony-forming units cultured out on the agar plates?

A. Just came back, which is the recommended level, which is less than one.

Q. Less than one colony-forming unit?

A. Yes. One ordinary, yes.

Q. And I want to make sure that we're clear. That was a sample you collected during the time that the Bair Hugger warming device was used and the particles that you were counting were moving over to the surgical site?

A. Correct.

MS. ZIMMERMAN: Object to form.  
BY MR. GORDON:

Q. Why did you decide not to include that information in the publication?

A. Because it didn't really add anything. It's such a poor identification of how much bacteria is present that I don't think it really gives us -- it's not very specific or sensitive; you have to have a huge number present to give you a positive value and, therefore, on the advice of the

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microbiologist, they said that you won't find anything out, which they were correct.

Q. How was it the hospital used these devices?

A. How?

Q. What -- for what purpose did the microbiologist use them?

A. So, I don't know --

MS. ZIMMERMAN: Object to form.

THE WITNESS: -- for other things, but in the operate -- in the orthopedic theatre they use them to test for the level of bacterial level, which has to be, by the standard, less than one colony-forming unit.

BY MR. GORDON:

Q. Is this -- under what circumstances would the microbiologist use those to test in the orthopedic operating room?

A. To my knowledge, it happens as a standard of -- a level standard, so I don't know whether they do it every year, but it's periodically they check.

Q. So, on a routine basis?

A. Correct, yes.

Q. So, I just want to make sure that the

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jury understands. The hospital routinely was checking the orthopedic surgical suites using the same agar plate device that you used in essentially the same manner?

MS. ZIMMERMAN: Object to form:  
Misstates the testimony.

THE EXAMINER: You may answer.

THE WITNESS: I don't know specifically how they do it, but how they advised me to do it as part of this experiment is what I did.

BY MR. GORDON:

Q. And your understanding was that the standard that they (that the OR) had to meet was less than one colony-forming unit when the microbiologist did the routine testing. Is that right?

A. Yes.

Q. When you did that testing, that was during the period of time when all the particles that you discussed in the 2011 paper were being mobilized over the surgical site, your paper indicates, because of the convection currents. Is that right?

A. Yes.

15 (Pages 54 to 57)

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Q. What -- did you consider the -- strike that.

Did you have a hypothesis that the particle, the increased particles, would potentially be capable of transporting bacteria?

A. We know that bacteria are carried on particles and, therefore, it's a possibility.

Q. By using the agar plate method that was the routine method of surveillance for the operating room, and finding/getting results that complied with the operating room standards, did that appear to indicate that whatever additional particles were being mobilized over the site by use of the Bair Hugger were not, in fact, adding to the bacterial load?

A. No.

MS. ZIMMERMAN: Object to form.

BY MR. GORDON:

Q. Did you have a hypothesis as to how there might be increased bacteria, but this method, standard surveillance method that the hospital uses, wasn't picking it up?

A. Because you have to have a large number of bacteria present on these plates for it to pick

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up a result.

Q. So --

A. So, we weren't looking to see whether there was one bacteria and that doubled to two. You would have to see a huge volume of bacteria to give you a positive result and that's what the microbiologist advised us why we wouldn't find anything.

Q. When you -- what do you mean by "huge"? You said that going from one to two, it might not pick it up, but what -- at what level would, was your understanding it might have picked it up?

A. I don't know, is the answer to that.

Q. Whatever the "huge" level is, though, were you satisfied that the agar plate testing that you did indicated that there wasn't a huge increase in bacteria?

MS. ZIMMERMAN: Object to form.

THE WITNESS: I was satisfied that it was less than one colony-forming unit per cubic meter.

BY MR. GORDON:

Q. During the mannequin study -- strike it.

During the human study with the Bair

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ANDREW JOHN LEGG

Hugger blanket on top of the, I guess it was Dr. Cannon --

A. Yes.

Q. -- was that then covered at all with any kind of cotton blankets or surgical draping or anything else or --

A. Just referring back to the picture probably gives it, shows it best. There was no further blanket on top, but the drape does come into contact with both warming devices.

THE EXAMINER: But the drape is above the warming device.

THE WITNESS: Correct.

BY MR. GORDON:

Q. At that time, when you were -- when the hospital was performing actual knee procedures, was that the standard way of draping just the single drape over the blanket?

A. Correct.

Q. Was the Bair Hugger blanket adhesive strip applied to Dr. Cannon?

A. Yes.

Q. How far way, if you recall, was the edge of the Bair Hugger blanket from the opening in the

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drape for the surgical access?

A. Just clarify what you mean by that.

Q. Well, I recognise that the picture is kind of difficult to see, but if I am understanding it the drape hung down, went -- made essentially a 90-degree angle?

A. Correct.

Q. Then at some point there had to be an opening in it --

A. Yes.

Q. -- to get access to the part of the body --

A. Yes.

Q. -- to work on. Right?

A. So, where the knee is exposed there is a hole in the drape where the leg comes through and it is depicted kind of where it is. The blanket comes down the torso and the hole in the drape, so the limb that is exposed, is mid-to upper thigh.

Q. And how far from the edge of the Bair Hugger blanket where the adhesive tape was taped off to Dr. Cannon to the opening --

THE EXAMINER: That is from the waist to upper thigh.

16 (Pages 58 to 61)

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1 ANDREW JOHN LEGG  
2 THE WITNESS: Upper thigh, yes.  
3 THE EXAMINER: Depending on how tall Dr.  
4 Cannon was?  
5 THE WITNESS: I can't tell you exactly  
6 how -- we didn't measure that.  
7 BY MR. GORDON:  
8 Q. Okay. There were no other -- there was  
9 just the single drape on top of the Bair Hugger?  
10 A. Yes.  
11 Q. Do you use any kind of warming device in  
12 your current practice?  
13 A. Yes.  
14 Q. What do you use?  
15 A. We use a Bair Hugger.  
16 Q. Is the draping method that you use now  
17 essentially the same?  
18 A. No.  
19 Q. How does it differ?  
20 A. So, we don't have -- I don't use wall  
21 extensions, so you just have that Howorth enclosure  
22 and no wall extensions. I cover the warming blanket  
23 with additional insulation and drapes similar at the  
24 top end to how it is, but there are significant  
25 changes which I have made.

1 ANDREW JOHN LEGG  
2 Q. And are those --  
3 A. That is in my current place.  
4 Q. Are these changes that you implemented  
5 yourself?  
6 A. Nobody in my current institute uses the  
7 wall extensions. I don't think we even have them in  
8 the hospital. I can't comment on how other people,  
9 whether they insulate the Bair Hugger, but I do  
10 that.  
11 Q. And do you do that as a result of your  
12 studies?  
13 A. Yes.  
14 Q. If we could turn now to page 430. Have  
15 you seen this document before, this e-mail?  
16 A. Yes.  
17 Q. Prior to when you got this pack of  
18 material?  
19 A. Correct, yes.  
20 Q. It is dated September 10th, 2010. Is  
21 that about the time that you would have seen it?  
22 A. Yes.  
23 Q. Could you tell me what the e-mail is?  
24 A. So, the e-mail is -- was attached to  
25 that. There was a manuscript from Mark Albrecht,

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1 ANDREW JOHN LEGG  
2 essentially that had been written by himself, or one  
3 of his colleagues, and was given to us for review.  
4 Q. And I apologize, things got a little  
5 jumbled. Well, no, I guess not. It is a divider.  
6 If you look at pages 432 through 450, is  
7 that the manuscript that would have been attached to  
8 the e-mail?  
9 A. Yes.  
10 Q. Who drafted the manuscript pages 432  
11 through 450?  
12 A. Either Mark Albrecht or Christopher  
13 Nachtsheim.  
14 Q. Had you -- did you ever meet Christopher  
15 Nachtsheim?  
16 A. I never met him or had any contact with  
17 him.  
18 Q. What was your understanding of his role  
19 in the preparation of this?  
20 A. I didn't really -- didn't really know.  
21 Q. Were you -- strike that.  
22 The manuscript pages 432 through 450,  
23 what relation, if any did, that have to the  
24 experiments that you and Mr. Albrecht carried out in  
25 July 2010 at the hospital in Sheffield?

1 ANDREW JOHN LEGG  
2 A. It was -- that is what, he wrote it.  
3 That was what was written up on the basis of what  
4 happened that day.  
5 Q. Okay. And if we turn to the 2013 study,  
6 pages 406 to 409, is this paper the 2013 paper, that  
7 you and Dr. Hamer published, is that based on the  
8 same experiments that are discussed in the draft  
9 article pages 432 through 450?  
10 A. Correct.  
11 Q. In the published paper, four pages,  
12 406-409, is there any reference to participation by  
13 Mr. Albrecht or Dr. Christopher Nachtsheim?  
14 A. No.  
15 Q. Why was that?  
16 A. Based on the manuscript, which we  
17 received to this draft manuscript, after discussing  
18 with Mr. Hamer it felt that it was more appropriate  
19 for us to write up the manuscript. We never had any  
20 deal that they were going to write the manuscript,  
21 so we were very surprised when that happened and  
22 felt very uncomfortable for them to be writing that  
23 manuscript. After a number of e-mails, mainly by  
24 Mr. Hamer, it was decided that we would write up the  
25 manuscript independently.

17 (Pages 62 to 65)

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Q. E-mails by Mr. Hamer and you, or someone else?

A. I was copied into them. Mr. Hamer initially replied to Mr. Albrecht, who then deferred it to Mr. Augustine -- Scott Augustine.

Q. Did you have any contact with Dr. Scott Augustine?

A. No, not directly, only by being copied in the e-mails.

Q. And some of the e-mails were between Dr. Hamer and Dr Scott Augustine?

A. Yes.

Q. Do you recall what the nature of that exchange or those exchanges were?

A. Essentially, we were very -- we were unhappy with how we had been managed, in terms of this paper had been pushed onto us, we had never had agreed that would be the case, and when we explained and expressed our, how unhappy we were about this, they were fairly abrupt and aggressive in their response and suggested that this was normal practice. But we didn't feel it was and, therefore, initially I think -- well, I do recall Mr. Hamer suggesting that they just took the paper on and

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wrote it themselves, but instead the decision made was that we were going to part company and we were going to write it up.

MS. ZIMMERMAN: Move to strike the response as hearsay.

THE EXAMINER: Hearsay.

BY MR. GORDON:

Q. In the interests of time I don't want, I'm not going to go through and do a side-by-side comparison, but I would like to ask you whether the draft that was sent to you by Mr. Albrecht was in any measure used by you in writing the paper that was ultimately published in 2013?

A. No.

THE EXAMINER: Did the draft itself ever proceed down the route towards publication?

THE WITNESS: Not that I'm aware of.

BY MR. GORDON:

Q. In the, I'll call it the "Albrecht draft" -- I misspoke.

If I could direct your attention onto page 394. It is an e-mail dated October 4th 2010.

A. Yes.

Q. Do you recall receiving this e-mail?

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ANDREW JOHN LEGG

A. Yes.

Q. There are a number of other names on here. Prior to receiving this e-mail had you ever, ever had any contact with Mike Reed?

A. No, I don't think so. I had contact with Mike Reed at some point, but I don't think prior to this, to my knowledge.

Q. Have you ever met Dr. Reed -- or Mr. Reed?

A. After this I had, yes. Not prior to.

Q. And was that in connection with anything to do with studies of Bair Hugger or HotDog, as opposed to, you know, medical society meetings --

A. No, no. It was coincidentally just at a Medical Society meeting.

Q. Right. Same question with respect to Dr. McGovern. Had you met him prior to October 4th, 2010?

A. No.

Q. Have you met him subsequently?

A. No.

Q. How about Robert -- Dr. Robert Gauthier?

A. No.

Q. And we have already talked about

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Nachtsheim. Have you ever met Scott Augustine?

A. No.

Q. Maybe I have asked you that already, sorry if I did.

I want to direct your attention to the bottom of this e-mail, where it says:

"I'll also be sending out a revised manuscript that includes Andrew Legg's comments/suggestions in the next week or two. I look forward to working with you all and wrapping up this research".

Do you know what "comments/suggestions" this refers to?

A. I did make comments to that manuscript. I don't have them, I don't know who -- I presume that they were on my hospital e-mail account, which I no longer have access to. But it was about this time where the comments were made and we were having discussions with Mr. Hamer about what was happening.

Q. At the point where you made the comments and suggestions that Mr. Albrecht refers to here, at that point were you of the view that you were going to work with Mr. Albrecht and --

A. No. I had my concerns. I was very

18 (Pages 66 to 69)



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1 ANDREW JOHN LEGG  
2 junior at the time, which is why I sought advice  
3 from Mr. Hamer.

4 THE EXAMINER: I am a bit confused by  
5 this, Mr. Legg. Perhaps you can help me. On page  
6 430 the attachment is a document called  
7 "Manuscript\_Legg\_9.7.docx" and 600 [kilobytes] I  
8 suppose it is. Do you see that?

9 A. Yes.

10 Q. Then if you go back to page 395, we have  
11 an Abstract\_Waste\_Heat\_Only document, which is only  
12 253 kilobytes and Laminar\_research\_low\_res, that is  
13 not a Word document, it is some other type,  
14 PowerPoint that is -- of 1105. So, when he says, "I  
15 will also", I'm sorry, "I will also be sending out  
16 in the next week or two"... I'm sorry. A false  
17 point. Maybe you're coming to it.

18 BY MR. GORDON:

19 Q. That is precisely where I am going.  
20 Thank you.

21 (To the witness) On this e-mail, on page  
22 394, the second paragraph at the bottom, it says:

23 "Also, I've attached an abstract draft to  
24 be submitted to the British Association for Surgery  
25 of the Knee 2011 Annual Meeting in Cardiff".

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1 ANDREW JOHN LEGG  
2 independent, after the discussions had been made at  
3 the Knee Society meeting.

4 Q. I am sorry. So, are we talking about the  
5 same -- the British Association -- BASK?

6 A. Yes.

7 Q. That 2011 meeting?

8 A. I don't think it was that meeting. I  
9 can't recall it. It would be in my CV. I can't  
10 remember exactly when the meeting was but it was  
11 presented --

12 Q. Who was it --

13 A. -- at the meeting.

14 Q. Who were identified as the authors?

15 A. Again, it was myself, Mr. Hamer and  
16 Mr. Cannon.

17 Q. Was there any indication that  
18 Mr. Albrecht had participated in the experiments?

19 A. No.

20 Q. At that -- in that poster for that  
21 presentation was there any indication that the  
22 makers of HotDog had supplied you with the use of  
23 equipment in doing these experiments?

24 A. No.

25 Q. Turn to page 428 --

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1 ANDREW JOHN LEGG

2 Do you see that?

3 A. Yes.

4 Q. Could you then turn to page 426.  
5 Actually, pages 426 through 428.

6 A. Okay.

7 Q. Does that appear to be, to your  
8 recollection, the draft to which Mr. Albrecht was  
9 referring in the October 4, 2010 e-mail?

10 A. That they had written, yes.

11 Q. And had you had any discussions with  
12 Mr. Albrecht, prior to October 4th, 2010, about  
13 presenting an abstract to the British Association  
14 for surgery of the Knee?

15 A. We spoke, during the time of the  
16 experiment, in terms of where I was hoping to move  
17 forward with presenting it and publishing it, but to  
18 my recollection nothing else apart from that.

19 Q. Okay. And this abstract on page -- that  
20 begins on page 426 identifies you, Dr. Hamer, Dr.  
21 Cannon, Mr. Albrecht and Dr. Nachtsheim as the  
22 authors. Do you -- was this abstract ever presented  
23 anywhere?

24 A. So, this abstract was never presented.  
25 An abstract was presented, which again was

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1 ANDREW JOHN LEGG

2 THE EXAMINER: If it helps, your CV shows  
3 that there was a presentation by you and Mr. Hamer  
4 at the 2012 BASK annual meeting --

5 THE WITNESS: Yes.

6 THE EXAMINER: -- at which only the two  
7 of you were named?

8 THE WITNESS: There was one prior to  
9 that.

10 THE EXAMINER: Well, that was to the  
11 British Hip Society --

12 THE WITNESS: Okay.

13 THE EXAMINER: -- the previous year.

14 THE WITNESS: And who was -- was that  
15 Mr. Cannon?

16 THE EXAMINER: Mr. Cannon, Mr. Legg and  
17 Mr. Hamer?

18 THE WITNESS: I do apologize. It was the  
19 Hip Society meeting.

20 THE EXAMINER: That was in 2011 and then  
21 the same or a similar document to the BASK in 2012?

22 THE WITNESS: So, the first presentation  
23 refers to the first publication, which we're calling  
24 the "human"; and the second one is for the  
25 mannequin.

19 (Pages 70 to 73)



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1 ANDREW JOHN LEGG  
2 THE EXAMINER: Thank you. Sorry, 428?  
3 BY MR. GORDON:  
4 Q. Yes. If you look at 428, I know the  
5 photocopy is not terribly good, but I would like you  
6 to compare that to the photos on page 407. You  
7 know, that may not be the better representation of  
8 that. I think if you look at page 491 -- I'm sorry  
9 I didn't direct your attention to that before -- and  
10 compare that top row of photos, the top row of  
11 photos, onto the second page of your 2013 study page  
12 407 --  
13 THE EXAMINER: 407 with 491.  
14 BY MR. GORDON:  
15 Q. Yes.  
16 Are those the same pictures?  
17 A. Yes.  
18 Q. So, who took those pictures?  
19 A. I don't recall whether I took them, or  
20 Mr. Albrecht took them, but they were taken with his  
21 camera.  
22 Q. And was it Mr. Albrecht who had selected  
23 them for inclusion in the draft BASK abstract  
24 presentation?  
25 A. There wouldn't -- I don't... The images

1 ANDREW JOHN LEGG  
2 that he questions, I don't recall. They would have  
3 been in his abstract, yes.  
4 Q. And I think if you look at pages 291  
5 through -- excuse me, 456 through 491. I probably  
6 should have referred you to that earlier.  
7 A. Yes.  
8 Q. No, I am sorry. 476 through 491.  
9 Actually the second page of that page (page 477)  
10 refers to an abstract re-do. Does this appear -- do  
11 you know if this is the second draft that  
12 Mr. Albrecht did incorporating your comments and  
13 suggestions?  
14 MS. ZIMMERMAN: Object to form.  
15 THE EXAMINER: You can answer.  
16 THE WITNESS: I don't know, is the answer  
17 to that. I don't know.  
18 BY MR. GORDON:  
19 Q. Okay. Now if you turn to the back page  
20 of this draft (page 491), those photos, they are the  
21 same as the ones on page -- the second page of your  
22 2013 study page 407?  
23 A. Yes.  
24 Q. Who selected those photos?  
25 A. For what --

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1 ANDREW JOHN LEGG  
2 Q. Well --  
3 A. -- for this or for mine?  
4 Q. Start with the Albrecht draft?  
5 A. Either -- well, one of the -- they  
6 selected it; I don't know whether it was Mark or  
7 Mr./Dr. Nachtsheim.  
8 Q. So, when you wrote your 2013 paper you  
9 selected the same photos?  
10 A. I selected the photos, which I believed  
11 depicted the, what -- our findings the best. They  
12 turned out to be the same, or very similar photos,  
13 because it's very clear what happened so they all  
14 look the same.  
15 THE EXAMINER: If I could use the  
16 vernacular: You didn't simply lift them out of  
17 their draft, you made a selection from the photos  
18 you had --  
19 THE WITNESS: Correct.  
20 THE EXAMINER: -- and they choose to be  
21 similar or identical?  
22 THE WITNESS: Yes.  
23 BY MR. GORDON:  
24 Q. Back to the 2013 paper, same page where  
25 the pictures are, I guess, in 407. In the left-hand

1 ANDREW JOHN LEGG  
2 column towards the beginning you say, just above  
3 "Experimental design":  
4 "All investigations were undertaken over  
5 one day in a single theatre, with the same equipment  
6 and investigators".  
7 A. Correct.  
8 Q. And that would -- is that anyone other  
9 than you and Mr. Albrecht?  
10 A. No.  
11 Q. Who set up the neutral-buoyancy helium  
12 soap bubble generator?  
13 THE EXAMINER: Sorry, where is that?  
14 MR. GORDON: Under air -- just going,  
15 keeping down a little bit. "Airflow visualisation".  
16 THE WITNESS: He did.  
17 BY MR. GORDON:  
18 Q. And who operated the digital camera?  
19 A. He did, although I took some photos, but  
20 again it was his camera.  
21 Q. Did -- how were the images stored? Were  
22 they shared? Did he give you --  
23 A. They were on his card, which he then  
24 e-mailed them through to me.  
25 Q. How many pictures did he e-mail to you?

20 (Pages 74 to 77)

1 ANDREW JOHN LEGG

2 A. I don't recall. There were many.

3 Q. Okay. In this second study, the 2000 --  
4 the mannequin study -- did you also use any type of  
5 device to see if you could collect bacteria?

6 A. No.

7 Q. You did the mannequin study. Which did  
8 you do first, the Bair Hugger or the HotDog?

9 A. It was random how we did it. Randomly  
10 generated. So, we set them up so there was not a  
11 pattern that flowed.

12 Q. How much time was lapsed between the  
13 completion of one and the starting of the next one?

14 A. Again, I don't recall. We ensured that  
15 the temperature had returned to the ambient  
16 temperature, which was measured outside the theatre,  
17 and that the particle levels were back down to  
18 normal so they had equalized.

19 Q. Okay. The Rocket PS23 Smoke Machine,  
20 that generated the 0.3-micron glycerol tracer  
21 particles, that was one of the pieces of equipment  
22 supplied by the HotDog Company?

23 A. Correct.

24 Q. Who set that up?

25 A. That was set up by both -- I had used it

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2 before because I had used it in my previous study.

3 Q. Did you still have it, or had you sent it  
4 back and --

5 A. No, I still had it. I still had it.

6 Q. When you were done with the mannequin  
7 study did you keep -- did you keep the Rocket PS23  
8 Smoke Machine, or did it go back to the HotDog  
9 people?

10 A. I don't have it, so I don't recall, but I  
11 presume that the rep had picked it up. I  
12 re-contacted him and gave it back to him, but I  
13 don't have it now.

14 Q. So, what if any equipment did  
15 Mr. Albrecht bring with him?

16 A. A camera, a light source, the bubble  
17 machine, and I don't remember whether we used the  
18 temperature probe which I had from the first study,  
19 or whether we used the temperature probe which he  
20 had as well.

21 Q. How about that particle counter? Was  
22 that not used?

23 A. No, that was used and I'm pretty sure  
24 that I still had that for the second study so we  
25 would have probably used the one that I had from the

1 ANDREW JOHN LEGG

2 first study.

3 Q. And did Mr. Albrecht take back with him,  
4 after you were done with this mannequin experiment,  
5 the equipment he bought: The camera; the bubble  
6 generator?

7 A. Correct.

8 Q. The number -- the particle numbers that  
9 you reflect in your 2013 paper would be at page 408.

10 A. Yes.

11 Q. They appear to be close, but not  
12 identical, to the numbers in the Albrecht drafts and  
13 I am wondering is that -- did you do more than one  
14 counting?

15 THE EXAMINER: What is the comparison  
16 between -- 408 and? 439 to 440?

17 MR. GORDON: We can go to that one. That  
18 is fine, I will find the specific pages in it. Page  
19 439 to 440.

20 THE EXAMINER: Okay.

21 BY MR. GORDON:

22 Q. And the numbers that I am looking at are  
23 2,000,000 -- on the Albrecht draft 2,173,000 --

24 A. What page is that again?

25 Q. 439. He's got 2,173,000.

1 ANDREW JOHN LEGG

2 A. Yes.

3 Q. And 2,172,000?

4 A. Yes.

5 Q. And you have 2,174,000?

6 A. Yes. He's referring to the difference,  
7 whereas I put the exact figures. So if you take  
8 2,174,000 and you take 2,000 away you get his  
9 figure. If you take 1,000 away, you get -- he's put  
10 difference but I've put exact.

11 Q. But they are the same numbers?

12 A. The same numbers, yes. It was the same  
13 experiment.

14 Q. But they're different "p" values given?

15 A. So, again, I had the original data so he,  
16 or his -- where he did statistics and I did  
17 statistics.

18 Q. So, you did your own statistics --

19 A. Yes.

20 Q. -- for the 2013. You, yourself, or did  
21 you have the assistance of any statistician?

22 A. No. I used software, which is SPS  
23 software, and did some statistics on the paper.

24 Q. Now, on your 2013 paper page 408, on the  
25 second column sort of in the middle, you say:

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"There was a little or no waste heat created from the radiant device which was well insulated on the side not in contact with the patient".

And we can find it in here, but the use of the phrase "waste heat" is also in the Albrecht draft. Prior to your writing this paper, if we're 2013, had you yourself used the phrase "waste heat" to describe anything in connection with forced-air warming?

A. I don't recall.

Q. Was that a -- is that a term with which you were familiar prior to your working with Mr. Albrecht?

A. I don't know. I don't know. It's a term I use, but it's -- I don't know when I started to use it.

Q. The next line after that one is:

"It does not appear that the forced-air warming device itself blows potentially contaminated warm air directly into the Howorth enclosure".

Did I read that correctly?

A. Yes.

Q. What led you to that conclusion?

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A. But this specifically applies to the theatre set-up that we had, that the drape comes all the way down to the ground, and what we looked at was what was heated, it wasn't that particles were being blown elsewhere. So, the drape was being heated, which made the hot air rise; it wasn't that air was being blown in which would do something else to the airflow.

THE EXAMINER: This is where you had the curtain or drapes coming down the one meter from the floor.

THE WITNESS: Correct, yes.

BY MR. GORDON:

Q. In the Albrecht --

A. No, sorry. Sorry. No. So that the front, which essentially blocks off where the patient's head is, the drape comes all the way down to the floor.

THE EXAMINER: Okay. Thank you, I understand.

BY MR. GORDON:

Q. In the Albrecht draft it indicates that there were two different set-ups. One where the drape was coming down from the ceiling; one where it

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was just laid over the patient?

A. Correct.

Q. What -- why did you decide not to include information about the results when you had the drape laid over the patient?

A. Because --

MS. ZIMMERMAN: Object to form.

THE WITNESS: -- that is not how I or Mr. Hamer, or anybody in our hospital at the time, would have conducted an operation and, therefore, we felt that it was important just to perform the experiments how we performed the operations.

BY MR. GORDON:

Q. And the bottom of page 408 of your 2013 study, you say:

"If the wall extension and vertical drape that exclude the anaesthetist are not in place, the production of the waste heat may not be as important because the air can leave the enclosure more easily".

Did I read that correctly?

A. Yes.

Q. And in your current set-up there are no wall extensions. Correct?

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A. Yes.

Q. And -- yes, I am correct?

A. Yes, you're correct. Yes, sorry.

Q. And is the vertical drape that you describe in the 2013 study, is that the same that you use now, or is there -- is it configured differently?

A. It is very, very similar.

Q. And the last page of your 2013 study, page 409. You say:

"This study does not show that forced-air warming increases the risk of infection -- only that in certain types of theatre set-up it can significantly disrupt unidirectional airflow and draw particles from the potentially contaminated area below the surgical field. This is a concern".

Did I read that correctly?

A. That is correct.

Q. What was it that led you to conclude that that would -- that your study did not show that forced-air warming increased the risk of infection?

A. Because we didn't show that. We didn't measure infection.

Q. And in this study you didn't measure

22 (Pages 82 to 85)

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bacteria either. Right?

A. No.

Q. I mean, it is obvious, but you can't have an infection without bacteria. Right? At least a bacterial infection?

A. True.

Q. And are there other infections that you were referring to, other than bacterial infections?

A. No.

Q. In the conflicts disclosure, or however you characterize it, on the 2013 Study, you say:

"No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article".

Did I read that correctly?

A. Correct.

Q. Did you consider HotDog to not be a company that was a commercial party, directly or indirectly related to the subject of the article?

A. We didn't benefit financially from the experiment.

Q. Did you consider the use of the equipment that HotDog loaned to you to be a benefit?

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A. Without it we couldn't have done the study and wouldn't have done the study.

Q. Did you consider Mr. Albrecht's involvement and assistance to be a benefit?

A. Yes. Without it we wouldn't have been able to do the study because of the equipment.

Q. Did you have any discussions with Dr. Hamer about whether you should disclose in this conflicts disclosure the involvement of Mr. Albrecht?

A. I don't -- I don't recall having that... About him being on the paper, or whether we should have disclosures about using their equipment? Which do you mean?

Q. Take them one at a time.

A. About his inclusion in the paper, we did speak about it and from their e-mail discussions we distanced ourselves as they said we should write the paper up independently.

In terms of the disclosures of conflicts of interest or using the equipment, I didn't think, I believe that -- it didn't occur to me, I should say, that by using their equipment would have a conflict of interest.

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Q. And even though you ended up writing up the study yourself, did you think that there might be some utility or some value to a reader of the paper to know that an employee of the HotDog Company assisted you in actually setting up and running the experiment?

A. The experiment and -- the set-up was already there and, therefore, things weren't changed with Mr. Albright's (sic) input. What we gained is the picture of how airflow works; nothing was changed. So, it didn't occur me, at the time I didn't think that it was important to put that down and that it's a conflict of interest.

Q. Did you have a discussion with Mr. Hamer about whether you should disclose something about Mr. Albrecht's involvement?

A. I don't recall -- I recall we spoke about the paper, but not in terms of the conflict of interest, that statement at the end.

Q. I asked you before about references in the first paper, either 13 references on the second paper. Did you do the research to compile those --

A. I did.

Q. -- as well. Mr. Albrecht didn't provide

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any copies of papers to you?

A. No.

THE EXAMINER: Are you going away from that, from that document?

MR. GORDON: I probably shouldn't, no --

THE EXAMINER: I want to see to see whether I have got this right now, Mr. Legg, because my understanding before I came here today was different. You have got a lamina downwards airflow.

THE WITNESS: Correct.

THE EXAMINER: Keeping the temperature down. Now you're saying that heating, or convection rising from the blanket --

THE WITNESS: It doesn't -- sorry, it doesn't keep the temperature down, it is airflow.

THE EXAMINER: But convection rising from the blanket --

THE WITNESS: Correct.

THE EXAMINER: -- can interfere with that airflow and potentially allow particles to rise from below the operative site. Is that right?

THE WITNESS: Correct. With a very specific theatre set-up.

THE EXAMINER: I am sure you do. I had

23 (Pages 86 to 89)



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1 ANDREW JOHN LEGG  
2 previously understood that it was some sort of  
3 rising of warm air from the floor up to the site,  
4 but I am wrong about that?  
5 THE WITNESS: That is not what -- our  
6 conclusion, that is not my belief. My belief is  
7 that it is through warming of the drape that causes  
8 particles to rise.  
9 THE EXAMINER: I understand, thank you.  
10 You have corrected my understanding today.  
11 Now, what have we got on the tape?  
12 THE VIDEOGRAPHER: Five minutes.  
13 THE EXAMINER: Would it be sensible to  
14 stop and change the tape or do you think you have  
15 got a topic you can do in five minutes?  
16 MR. GORDON: I'm going to be done in five  
17 minutes.  
18 THE EXAMINER: Let's get it done. Five  
19 minutes and then we'll change the tape.  
20 BY MR. GORDON:  
21 Q. Did Mr. Albrecht set up the smoke  
22 generator?  
23 A. There is not much to set up, I can't  
24 recall whether he did or not. I had used it before.  
25 You turn it on, you put detergent in it,

1 ANDREW JOHN LEGG  
2 essentially, so I don't recall whether it was  
3 himself or myself, but I was perfectly capable of  
4 doing that.  
5 Q. Did you recall whether the velocity was  
6 adjustable?  
7 A. No.  
8 Q. Did you tell Mr. Albrecht about your  
9 negative results from the agar plates that you had  
10 done in the first experiment?  
11 A. Again, I don't recall having a  
12 conversation with him, but there is no reason why I  
13 wouldn't have done through just discussion  
14 throughout the day. We had spoke about the study  
15 previously so, yes, I'm sure I would have done.  
16 Q. Do you recall Mr. Albrecht telling you  
17 anything to the effect of that they had also tried  
18 to find bacteria and couldn't -- or weren't  
19 successful in culturing out any bacteria?  
20 A. I don't remember, but that wouldn't  
21 surprise me.  
22 Q. Since moving to your current hospital did  
23 you ever suggest to anyone that it would be  
24 advisable to switch from using the Bair Hugger to  
25 some other form of warming?

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1 ANDREW JOHN LEGG  
2 A. No. I have spoken to people about my  
3 concerns with waste heat, but I think you can -- if  
4 you deal with the waste-heat issue I don't think  
5 that the problem is with forced-air warming.  
6 MR. GORDON: Thank you.  
7 THE EXAMINER: Thank you. Let's take a  
8 break. Change the tape.  
9 THE VIDEOGRAPHER: End of DVD one, volume  
10 one of the deposition of Mr. Andrew Legg. Going off  
11 the record at 4:37. Recording has stopped.  
12 (Recess taken)  
13 THE VIDEOGRAPHER: This is the beginning  
14 of DVD 2 in volume 1 of the deposition of Mr. Andrew  
15 Legg. We're back on the record at ten-to five.  
16  
17 EXAMINATION BY MS. ZIMMERMAN:  
18 Q. Mr. Legg, I will do my best to refer to  
19 you as "mister" because, of course, in the United  
20 States "doctor" is a sign of respect.  
21 You have not met with myself before  
22 today. Is that correct.  
23 A. That is correct, no.  
24 Q. And you have not met with anybody else  
25 who represents Plaintiffs in the United States

1 ANDREW JOHN LEGG  
2 litigation?  
3 A. That is correct.  
4 Q. You have had no e-mail conversations with  
5 anybody representing patients in the US. Correct?  
6 A. No.  
7 Q. Your background is in orthopedics. Is  
8 that right?  
9 A. That is correct.  
10 Q. We were just provided today a copy of  
11 your curriculum vitae. Do you have a copy of that  
12 as well?  
13 A. I do, yes.  
14 Q. Could you take a minute, as this video  
15 may well be played to the judge and potentially the  
16 jury in the United States, could you take a minute  
17 to introduce yourself to the judge and the jury and  
18 tell us a little bit about your medical training?  
19 A. Okay. My name is Andrew Legg and I am  
20 currently a consultant orthopedic surgeon in  
21 Rotherham, where I have been consultant since July  
22 this year. Prior to that I did a year's Fellowship,  
23 which is specialist higher level training; six  
24 months in New Zealand; and six months in Coventry.  
25 Prior to that I was on an orthopedic rotation for

24 (Pages 90 to 93)

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eight years in the South Yorkshire region, with some time in East and West Yorkshire, which in the States is a residency. The two years prior to that, which were, I call, a Foundation Year one and two, which are the first two years after qualifying as a doctor, were in Huddersfield and Bradford, so in the Yorkshire region.

Q. Is some of this what we might call, in the United States, post-doctoral research?

A. I'm not fully familiar in terms of post-doctoral.

Q. So, we have a university program.

A. Yes.

Q. You went to university?

A. Yes, correct.

Q. And then you went to medical school after that?

A. No. We just go to medical -- some people do go to university, do a degree and then go to medical school. Whereas the vast majority still go straight to medical school, so I went to medical school at the age of 18. As part of my five years as a medical student I took a year out and did a degree, so I was at university for six years. In

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that period of time I got a BSc (Bachelor of Science degree) and also my medical degree, which I finished in 2005.

Q. Okay. Then you have a degree or some training from the Royal College of Surgeons in Edinburgh?

A. Yes. So that is part of my surgical training. So, you do a MRCS, which is a Member of the Royal College of Surgeons, and then finally you do another exam, which is an FRCS but that is specifically to orthopedics.

Q. Right. So, it is a sub-specialty training in orthopedics?

A. Correct, yes.

Q. And you have completed that?

A. Yes.

Q. Do you act as an instructor, at this point, for other orthopedic trainees?

A. I do, yes.

Q. And what does that involve?

A. That involves -- I haven't specifically got one person under me currently. There are many junior doctors which you have, which involve ward rounds, looking after my patients, on-call

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responsibilities when we receive acute trauma patients, and also in theatre and clinics, supervising them and guiding them appropriately.

Q. Right. When we're done going through your curriculum vitae I will offer this copy to the Court Reporter to mark as, I guess, Exhibit 2 -- do we only have one exhibit so far. All right.

From time to time have you published literature in the medical field?

A. Yes.

Q. Could you tell me about that?

A. So, two of the publications which we have today, and then there is a third publication, which I more recently published, which is in 2015, which is a published paper on distal bicep, where the bicep tendon is attached at the elbow essentially.

Q. I should ask: Do you have a speciality inside of orthopedics?

A. Knee surgery is my specialty.

Q. Okay. It is my understanding that infection prevention is a critical issue for orthopedic surgeons. Is that consistent with your practice?

A. Yes, correct.

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Q. Would you agree that orthopedic surgeons are -- pardon me orthopedic surgery patients are typically at higher risk for infection than perhaps a different type of surgery?

MR. GORDON: Objection. Exceeds the scope of permitted examination.

THE WITNESS: Should I answer?

THE EXAMINER: Not for the moment. Are you maintaining that objection?

MS. ZIMMERMAN: If you go to page seven of the order, schedule D.

MR. GORDON: I will withdraw that.

THE EXAMINER: Okay.

MR. GORDON: Thank you, I am sorry.

THE WITNESS: So, I think the consequences, especially with arthroplasty hip and knee replacement surgery, of getting an infection are more significant. In terms of the frequency compared to other operations, I don't think I can comment in terms of how whether it is more frequent or not, but the consequences are much greater, potentially.

BY MS. ZIMMERMAN:

Q. Earlier Mr. Gordon asked you about



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1 ANDREW JOHN LEGG  
 2 infection risks. Do you remember those questions?  
 3 A. I remember him asking me, I don't  
 4 remember what the questions were, I'm afraid.  
 5 Q. It has been a long day.  
 6 Are you familiar with the term "chain of  
 7 infection"?  
 8 A. Not specifically, no.  
 9 Q. Not specifically. I think that you  
 10 testified earlier that bacteria is required for a  
 11 bacterial infection.  
 12 A. Correct.  
 13 Q. Are there any other requirements that you  
 14 know of for a bacterial infection?  
 15 A. It needs a warm, moist environment and  
 16 the ability for the bacteria to replicate,  
 17 essentially.  
 18 Q. A viable bacteria?  
 19 A. Yes. Correct.  
 20 Q. And potentially a susceptible host.  
 21 Would you agree with that?  
 22 A. Yes.  
 23 Q. Right. I would like to turn back to your  
 24 CV and these articles that you published. Are these  
 25 articles in peer-review journals?

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1 ANDREW JOHN LEGG  
 2 A. Correct.  
 3 Q. Could you explain to the judge and the  
 4 jury in the United States what "peer reviewed"  
 5 means?  
 6 A. Peer review is essentially a group of  
 7 your colleagues, your peers, they are usually senior  
 8 colleagues, senior consultants, who have a large  
 9 amount of experience in orthopedics and, more  
 10 specifically, in the specific field in which the  
 11 paper is talking about. They review your research  
 12 to make sure that it's of, firstly, high enough  
 13 standard to be published in that specific journal;  
 14 and also that it's of good enough quality in terms  
 15 of what you're actually writing in that report.  
 16 Q. Why is the peer-review process important  
 17 to someone who is reading the article, for example?  
 18 A. It is important to make sure that the  
 19 standard of that article is high, and also that the  
 20 evidence which is being presented is accurate.  
 21 Q. To your knowledge are articles submitted  
 22 for peer-review consideration and ultimately turned  
 23 down?  
 24 A. Many are turned down.  
 25 Q. That happens from time to time?

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1 ANDREW JOHN LEGG  
 2 A. Very frequently. The vast majority -- I  
 3 couldn't tell you a number -- are refused I would...  
 4 MS. ZIMMERMAN: Right. I would like to  
 5 turn to --  
 6 THE EXAMINER: Are you going to mark that  
 7 before you go --  
 8 MS. ZIMMERMAN: Yes.  
 9 Q. I'm going to turn to the thing we have  
 10 called the "human study" thus far, which appears on  
 11 page 411 of your materials.  
 12 A. Okay.  
 13 Q. Just for clarification, I think Mr.  
 14 Gordon referred to this throughout his questioning  
 15 as a 2011 study. It appears from the notes on the  
 16 left-hand side it was submitted for publication in  
 17 2011?  
 18 A. Yes.  
 19 Q. And ultimately published in 2012?  
 20 A. That is correct, yes.  
 21 Q. So, if we refer to it as 2011 and 2012 we  
 22 know that this is the article we're referring to?  
 23 A. Yes, correct?  
 24 THE EXAMINER: Remind me, is this the  
 25 human or the mannequin?

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1 ANDREW JOHN LEGG  
 2 THE WITNESS: Human.  
 3 MS. ZIMMERMAN: The human.  
 4 Q. Mr. Legg, is this article a peer-reviewed  
 5 study?  
 6 A. Yes.  
 7 Q. And where was it published?  
 8 A. It was published in the Journal of Bone  
 9 and Joint Surgery.  
 10 Q. Is that considered a prominent  
 11 publication?  
 12 A. Yes.  
 13 Q. What did you measure in this study?  
 14 A. We measured a number of factors.  
 15 Firstly, that they were increased particles and  
 16 increased temperature when forced-air warming was  
 17 used in our specific theatre set-up, which we used  
 18 at the Northern General.  
 19 Q. Do you recall questions from Mr. Gordon  
 20 about whether a particle count automatically equates  
 21 with a bacteria count?  
 22 A. Yes.  
 23 Q. And you would agree that a particle count  
 24 is not necessarily the same as an increased bacteria  
 25 count?

26 (Pages 98 to 101)

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A. That's correct.

Q. But you would also agree that an increased particle count is of concern to an orthopedic surgeon.

A. That is correct and that is what I concluded.

Q. Why?

A. Because particles can carry bacteria and, as a result, it could increase the risk of infection.

Q. Is that because bacteria kind of hitchhike on a particle?

A. Correct.

Q. And they can hitchhike on a particle into a surgical site?

A. Yes.

Q. Would you agree that it is important to reduce the particles in an operating room theatre?

A. Yes.

Q. And would you agree that it takes only a very small number of microbes to cause infection in an orthopedic surgery patient?

MR. GORDON: Object to the form of the question.

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THE EXAMINER: I think "microbes" is a term that hasn't yet been used so I don't understand how it fits in with (a) particles and (b) bacteria.

MS. ZIMMERMAN: Sure.

Q. Can "microbes" and "bacteria" be interchangeably --

A. I'm happy to.

MS. ZIMMERMAN: -- to understand both ways.

THE EXAMINER: Okay.

BY MS. ZIMMERMAN:

Q. Would you agree that it only takes a very small number of bacteria, or microbes, to cause a potentially devastating infection in an orthopedic-surgery patient?

MR. GORDON: Object to the form of the question.

THE EXAMINER: You can answer.

THE WITNESS: Yes.

BY MS. ZIMMERMAN:

Q. When you were conducting the measurements in this first human study, did you take this -- did you make any changes as between the measurements for the Bair Hugger and then later with the HotDog?

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A. No.

Q. With the tools that were doing the measurements?

A. Yes -- no.

Q. At the end of your paper you conclude: "Further work is required to confirm that unidirectional airflow is disrupted by forced-air warming patient warming devices under our specific experimental theatre set-up and future studies are needed to visualise the airflow over the surgical site".

Did I read that correctly?

A. Yes.

Q. Did you do additional studies?

A. The additional study was the second paper.

Q. Have you done any other studies beyond the second paper?

A. No.

Q. Turning next to the mannequin study, which appears starting at page 406, that is the, "Forced-air patient warming blankets disrupt unidirectional airflow", is the title of that study. Do you see that as well?

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A. Yes.

Q. Was this published in a peer-review journal?

A. Yes, it was.

Q. Which journal?

A. The Bone and Joint Journal.

Q. Is that the same as the first study?

A. That is correct.

Q. Same journal. Before I forget, were the operating rooms the same between the two studies?

A. I can't confirm whether -- I don't remember whether they were the same, but it's the same hospital and, therefore, the same -- we presume the same theatre set-up. I can't recall whether it was exactly the right, the same theatre or not.

Q. Okay. What did you measure in this mannequin study?

A. We measured the same as before. We measured temperature, and we measured particle count and we also visualized the airflow using neutrally-buoyant helium bubbles.

Q. Were there three separate types of measurements you were doing? Temperature?

A. Yes.

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Q. Particle count?

A. Yes.

Q. And then this bubble machine?

A. Correct.

Q. And you made each of those three measurements as to three different scenarios. The Bair Hugger --

A. Yes.

Q. -- the HotDog, and a control study where there was no heat. Correct?

A. Correct.

Q. Was there anything changed between when you took the measurements from the Bair Hugger on the temperature, to when you took the measurements for the HotDog regarding temperature?

A. No.

Q. No change to the machine calculating or measuring the temperature?

A. No.

Q. Was there any changes at between when you were measuring temperature to the control?

A. No.

Q. Likewise, was there any changes made to the particle count machine as between when you

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measured the forced-air warming blanket and moving to the HotDog?

A. No.

Q. No changes made to the measurement there?

A. No.

Q. Again, no changes as between those and the control?

A. No.

Q. Were there any changes made to the bubble machine between when you had the Bair Hugger on and the HotDog?

A. No.

Q. Any changes to the bubble machine as between when the Bair Hugger was on and the control?

A. No.

Q. You did your best to keep all of the measurements tools the same?

A. Correct.

Q. Why is that important to you?

A. Because we wanted to find out one thing and that is the effect of the warming device and if we changed other parameters it could have resulted in a misleading outcome.

Q. It was important to you that this paper

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be accurate?

A. Correct.

Q. What was the principle finding in the mannequin study?

A. That forced-air warming increased the temperature over the surgical site, but fundamentally caused convection currents to be created and particles drawn up from below the level of the table onto the surgical site.

Q. Have you ever had any classes in engineering?

A. If you class physics as engineering at school, yes, but otherwise no.

Q. Okay. I take it you would not consider yourself an expert in fluid dynamics, for example?

A. No.

Q. Are you familiar with some of the basic ideas in fluid dynamics?

A. Very basic.

Q. All right. In this mannequin study, you found 1,000-fold increase in concentration of particles for the forced-air warming blankets, as compared to the radiant warming. Is that correct?

A. That is correct.

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Q. That was significant to you?

A. Yes.

Q. Mr. Gordon asked you some questions about the statistical analysis done in connection with this study?

A. Yes.

Q. Did you do that yourself?

A. I did.

Q. Do you recall what the p-value was of your calculations?

A. It was -- I can't specifically recall. It was very, very low. I will have to have a look.

THE EXAMINER: 408.

MS. ZIMMERMAN: The p-value is .00 --

A. 001.

Q. 2.

THE EXAMINER: Where do we find that?

MS. ZIMMERMAN: Middle of the first, second full paragraph on page 408.

THE EXAMINER: Right, thank you.

BY MS. ZIMMERMAN:

Q. Is that correct?

A. That is correct.

THE EXAMINER: Do you want to explain

28 (Pages 106 to 109)

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1 ANDREW JOHN LEGG  
 2 exactly what a p-value is?  
 3 THE WITNESS: So a significance is  
 4 accepted that significance-of is -- well, it is  
 5 deemed significant, sorry, if I clarify that, if it  
 6 is less than 0.05 and that is what is accepted.  
 7 BY MS. ZIMMERMAN:  
 8 Q. Ultimately at the end of this mannequin  
 9 study, you and Mr. Hamer write:  
 10 "This study does not show that forced air  
 11 warming increases the risk of infection only that in  
 12 certain types of theatre set-up it can significantly  
 13 disrupt unidirectional airflow and draw particles  
 14 from the potentially contaminated area below the  
 15 sterile surgical field. This is a concern".  
 16 Did I read that correctly?  
 17 A. Yes, you did.  
 18 Q. Did you do any additional studies with  
 19 respect to the concerns you raised?  
 20 A. No.  
 21 Q. Are you familiar with any 3M employees?  
 22 A. Employees in terms of the gentlemen that  
 23 were, I met within the study, yes. If they are  
 24 employees of 3M, I think they are part of 3M  
 25 company.

1 ANDREW JOHN LEGG  
 2 Q. Do you deal with anybody at 3M on a  
 3 regular basis today?  
 4 A. No.  
 5 Q. Have you had any other connection with 3M  
 6 employees outside of the scope of these potential  
 7 two studies?  
 8 A. No.  
 9 Q. Has anyone for 3M ever reached out to you  
 10 and asked questions about the concerns that you  
 11 raised in both the human study and the mannequin  
 12 study?  
 13 A. About the conclusions that we made?  
 14 Q. Correct.  
 15 A. No.  
 16 Q. Has anyone at 3M ever offered to fund  
 17 additional research for you?  
 18 A. No.  
 19 Q. Are you aware of any other researchers  
 20 that have looked into the concerns that you raised?  
 21 A. Yes. Not specifically the concerns that  
 22 I raised, I think there were some other studies s  
 23 happening at the similar time, with other authors;  
 24 some in the north, in the north of England.  
 25 THE EXAMINER: But nothing, as I

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1 ANDREW JOHN LEGG  
 2 understand it, taking your words, "This is a  
 3 concern", and saying we must investigate this  
 4 further?  
 5 THE WITNESS: No, not that I'm aware.  
 6 BY MS. ZIMMERMAN:  
 7 Q. Are you aware that 3M has criticized the  
 8 paper that you published?  
 9 A. Until --  
 10 THE VIDEOGRAPHER: That is someone  
 11 joining --  
 12 MS. ZIMMERMAN: Is someone on the line?  
 13 THE VIDEOGRAPHER: I think it is someone  
 14 checking the line is open.  
 15 BY MS. ZIMMERMAN:  
 16 Q. Sorry for the interruption.  
 17 A. Until I have been involved in this  
 18 process, no.  
 19 Q. Prior to learning of the litigation in  
 20 the United States?  
 21 A. Sure.  
 22 Q. Are you aware that 3M sent out  
 23 characterizations of your studies to many of its  
 24 customers?  
 25 A. No.

1 ANDREW JOHN LEGG  
 2 Q. Would that come as a surprise to you?  
 3 A. Yes.  
 4 THE VIDEOGRAPHER: Can I say that this  
 5 "beep" noise that keeps coming out is someone  
 6 joining the conference link up and --  
 7 THE EXAMINER: I understand that.  
 8 THE VIDEOGRAPHER: There was a report  
 9 they had not been getting audio all day, which I  
 10 would say is probably because we were off-line on  
 11 the call.  
 12 THE EXAMINER: Strangely reluctant to  
 13 identify themselves.  
 14 MS. ZIMMERMAN: Is anyone on the phone?  
 15 THE EXAMINER: I don't think we need  
 16 worry about it.  
 17 THE VIDEOGRAPHER: They say they are  
 18 receiving audio okay.  
 19 BY MS. ZIMMERMAN:  
 20 Q. Mr. Gordon asked you some questions about  
 21 your ongoing use of the Bair Hugger in your medical  
 22 practice. Do you recall that?  
 23 A. Yes.  
 24 Q. You testified that you're using a  
 25 different style of draping your patients now. Is

29 (Pages 110 to 113)

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1 ANDREW JOHN LEGG  
2 that correct?  
3 A. Similar draping, but the theatre set-up  
4 is different.  
5 Q. And the changes that you made to your  
6 practice now are based on your own research. Is  
7 that right?  
8 A. That is correct.  
9 Q. It is not based on any instruction that  
10 you received from 3M?  
11 A. No.  
12 Q. To your knowledge, are there any  
13 instructions on Bair Hugger blankets or materials  
14 that instruct how to do draping?  
15 A. To set up the Bair Hugger, or the actual  
16 draping side of things?  
17 Q. Well, the Bair Hugger with the draping?  
18 A. Not that I'm aware of, but I must admit I  
19 haven't looked for it.  
20 Q. Okay. Do you know what an observational  
21 study is?  
22 A. Yes.  
23 Q. How would you explain that to the jury?  
24 A. So, an observational study is, I suppose,  
25 what is said about looking at something and making

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1 ANDREW JOHN LEGG  
2 judgment on the basis of what you see.  
3 Q. Is that what you did in these particular  
4 studies, the mannequin study and the human study?  
5 A. Yes, in terms of the observational side  
6 of things, yes.  
7 Q. You felt that they were both useful,  
8 useful studies?  
9 A. Very much so.  
10 Q. And they both were submitted to highly  
11 respected peer-review journals?  
12 A. Yes.  
13 Q. And they were both accepted for  
14 publication?  
15 A. Yes.  
16 Q. Do you stand by the findings that you  
17 published in these studies?  
18 A. Absolutely.  
19 Q. I don't have anything further?  
20 THE EXAMINER: Except you're going to  
21 make that an exhibit.  
22 MS. ZIMMERMAN: That is right. We will  
23 formally offer Exhibit 2.  
24 THE VIDEOGRAPHER: We're still on the  
25 record.

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1 ANDREW JOHN LEGG  
2 EXAMINED BY MR. GORDON:  
3 Q. The journal which you published, the Bone  
4 and Joint Journal, excuse me, are there two  
5 different versions of it -- an American one and a  
6 British one?  
7 A. There is. Yes.  
8 Q. Which one did you publish?  
9 A. The British.  
10 Q. Do you have any idea what the impact  
11 score of the Bone and Joint Journal of Britain is?  
12 A. I don't know, no.  
13 Q. Okay. Counsel asked you about your  
14 discussion about the potential for particles to move  
15 bacteria to the surgical site. Based on your  
16 research do you have any reason to think that that  
17 concern is anything other than a theoretical  
18 concern?  
19 A. It's only a theoretical concern because I  
20 didn't prove it.  
21 Q. Okay. Even with 1,000-fold increase in  
22 the particle counts that you saw, the agar testing  
23 that the hospital used routinely to see if the OR  
24 was okay, it passed that -- it met those standards?  
25 MS. ZIMMERMAN: Object to form.

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1 ANDREW JOHN LEGG  
2 MR. GORDON: Correct?  
3 THE EXAMINER: Answer.  
4 THE WITNESS: Yes, it did, but you're  
5 getting things slightly confused. The 1,000-fold is  
6 partly because we introduced particles onto the  
7 floor in the second study, so we exaggerated the  
8 difference.  
9 BY MR. GORDON:  
10 Q. Even with that exaggerating difference,  
11 agar plate still didn't grow out --  
12 A. No.  
13 Q. -- greater than one CF unit?  
14 A. No.  
15 Q. Okay. I was a little confused about the  
16 reference to 3M employees. Were you saying that  
17 there were 3M employees involved in either of your  
18 studies?  
19 A. I don't know exactly who Albright (sic)  
20 and Augustine worked for in addition to HotDog in  
21 terms of they manufacture the HotDog, but they have  
22 no -- if they're not part of 3M, no, is the answer  
23 to that.  
24 Q. Did you know at the time that Augustine  
25 and Albrecht were affiliated with HotDog?

30 (Pages 114 to 117)



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ANDREW JOHN LEGG

A. Yes.

Q. Did you know at the time that HotDog was a competitor of the Bair Hugger?

A. Yes.

Q. In your hospital is the orthopedic surgeon responsible for setting up the draping and the warming device?

A. The warming device is usually applied from the anaesthetic side, but I would, I make sure it is where I want it to be, and then I set up the draping side of things.

THE EXAMINER: You personally, or do you instruct someone else how to do it?

THE WITNESS: Me personally with somebody else.

BY MR. GORDON:

Q. In terms of -- what role, if any, does the anesthetist, or I guess you say the "anesthetist --"

A. Anesthetist.

Q. -- have in determining what type of warming to use in the configuration of it?

A. None. In most, well most hospitals I have worked in there is only the Bair Hugger and,

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therefore, warming device is very important. It goes on the torso, I move it and instruct them if it is too low down or too high up that I am concerned.

Q. Your hospital is part of the NHS. Correct?

A. Correct.

Q. As part of the NHS are you required to report surgical-site infections from the knee and joint replacements?

A. Yes.

Q. In the time that you have been affiliated with your current hospital using Bair Hugger, have those infection rates been high relative to other hospitals---

MS. ZIMMERMAN: Object to the scope. This is outside the scope of cross. Beyond the scope of cross.

THE EXAMINER: It does seem to go somewhat beyond what was questioned about in cross-examination.

THE WITNESS: Can I answer or not?

THE EXAMINER: If you're not going to take this any further, Mr. Gordon, I will allow the witness to answer the question.

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ANDREW JOHN LEGG

BY MR. GORDON:

Q. Yes. All I want to know is where the hospital stands in relationship to others?

A. No, is the answer. It hasn't increased. (Reporter clarification) Increased.

Q. And compared to other hospitals in the NHS it is not an outlier?

A. No.

MS. ZIMMERMAN: Objection: Foundation.

MR. GORDON: Thank you. No further questions.

THE EXAMINER: Thank you very much. That concludes your examination:

THE VIDEOGRAPHER: This is the end of DVD 2 in volume 1 of the deposition of Mr. Andrew Legg. We're going off the record at twenty-past five.

THE EXAMINER: Thank you both.

THE VIDEOGRAPHER: Excuse me, we're back on the record for the production -- we're staying on... We need to put the production order on the record, they have asked us, since this is the first deposition. I believe that, Mr. Gordon, you want a synchronized DVD. Is that correct?

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MR. GORDON: I don't know that I want synchronized. What is that?

THE VIDEOGRAPHER: Synchronized to the transcript.

MR. GORDON: I don't.

MS. ZIMMERMAN: It's closed captioning at the bottom.

THE VIDEOGRAPHER: Do you want that?

MS. ZIMMERMAN: I don't think we need it.

THE VIDEOGRAPHER: Not at this point?

MS. ZIMMERMAN: Not at this point. Yes.

THE VIDEOGRAPHER: Both the other two parties--

MR. GORDON: I don't want it at the -- I don't normally.

THE VIDEOGRAPHER: Just the court report and the exhibits. Anything else?

MR. ASSAAD: And expedite. Expedite by tomorrow?

THE COURT REPORTER: By tomorrow?

MS. ZIMMERMAN: Is it a possibility, is what he meant to ask.

THE COURT REPORTER: Maybe by Sunday.

THE VIDEOGRAPHER: Read and sign.

31 (Pages 118 to 121)



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ANDREW JOHN LEGG

MS. ZIMMERMAN: Read and sign.

THE VIDEOGRAPHER: ASCII's. We're still doing that.

MR. ASSAAD: I guess the question I have is if it's not going to get until Sunday I won't expedite it. If you can get before Sunday.

THE VIDEOGRAPHER: Okay. We're finished at 5.22. Recording has stopped.  
(Whereupon the deposition concluded.)

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## CERTIFICATE OF DEPONENT

I, ANDREW JOHN LEGG, hereby certify that I have read the foregoing pages, numbered 1 through 117, of my deposition of testimony taken in these proceedings on Thursday, December 1, 2016, and, with the exception of the changes listed on the next page and/or corrections, if any, find them to be a true and accurate transcription thereof.

Signed: .....

Name: ANDREW JOHN LEGG

Date:

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## CERTIFICATE OF COURT REPORTER

I, VICTORIA MARIE DAVIES LLB(Hons), Member of the British Institute of Verbatim Reporters, hereby certify that the testimony of the witness ANDREW JOHN LEGG in the foregoing transcript, numbered pages 1 through 117, taken on Thursday, December 1, 2016 was recorded by me in machine shorthand and was thereafter transcribed by me; and that the foregoing transcript is a true and accurate verbatim record of the said testimony.

I further certify that I am not a relative, employee, counsel or financially involved with any of the parties to the within cause, nor am I an employee or relative of any counsel for the parties, nor am I in any way interested in the outcome of the within cause.

Signed: .....

VICTORIA MARIE DAVIES

Dated: December 13, 2016

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NAME OF CASE:

DATE OF DEPOSITION:

NAME OF WITNESS:

Reason Codes:

1. To clarify the record.
2. To conform to the facts.
3. To correct transcription errors.

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